Halcrow Pacific Pty Ltd

April 2009

Report on the Efficiency of Capital and Operating Expenditure by Water Corporation, AQWEST and Busselton Water Board

Final Report – Water Corporation

Prepared for the Economic Regulation Authority

Halcrow

Halcrow Pacific Pty Ltd

April 2009

Report on the Efficiency of Capital and Operating Expenditure by Water Corporation, AQWEST and Busselton Water Board

Final Report – Water Corporation

Prepared for the Economic Regulation Authority

Halcrow Pacific Pty Ltd
Level 1, 542 Station Street, Box Hill, Melbourne, VIC 3128
Tel +61 3 9899 9777 Fax +61 3 9899 1214
www.halcrow.com/australasia

Report on the Efficiency of Capital and Operating Expenditure by Water Corporation, AQWEST and Busselton Water Board

Final Report

Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Prepared by	Checked by	Authorised by
1	0	Preliminary Draft Report	28/11/08	AD/AR DS/DF	DF	DF
1	1	Draft Report	24/12/08	DS	DF	DF
1	2	Final Report	30/01/09	DS	DF	DF
1	3	Final Report	18/02/09	DS/DF	DF	DF
1	4	Final Report – Public Version	30/04/09	DF	DF	DF

Filename & Path:

W:\Project\Water\KMWHBC - ERA Expenditure Efficiency Review 2008\HBC 32 - Reports\Final Report\KMWHBC - ERA Pricing Review - Capex-Opex Efficiency Report - Final Report - Water Corp Rev 4.Doc

Contents

Executive Summary

Overview

The Economic Regulation Authority (the Authority) has engaged Halcrow as an expert engineering consultant to provide a report to the Authority, which establishes the efficiency of capital and operating expenditure by the Water Corporation, AQWEST and Busselton Water Board. The review will cover both historical capital and operating expenditure since the 2005 pricing inquiry, and projected capital and operating expenditure.

Background

The Economic Regulation Authority (the Authority) was established on 1 January 2004 and is the independent economic regulator for monopoly aspects of the gas, electricity and rail industries and licenses providers of gas, electricity and water services in Western Australia.

A previous inquiry by the Authority in 2005 examined the water and wastewater pricing of the Water Corporation and the water pricing of the Bunbury and Busselton Water Boards. This review focussed on the development of the regulatory frameworks for the three service providers.

The Authority has received a Terms of Reference from the Western Australian Government to conduct an inquiry into the tariffs of the Water Corporation, AQWEST (Bunbury Water Board) and Busselton Water Board.

Our Approach

The focus of the review has been a high-level review of the capital and operating planning and delivery processes of Water Corporation, AQWEST and Busselton Water to gain an understanding of the adequacy, and robustness of these processes. Provided that the capital and operational processes are appropriate and robust, we can gain assurance over the appropriateness of the proposed capital and operating expenditure forecasts of each water authority.

As part of this Report, we have also conducted a high-level review of the historical capital and operating expenditure of Water Corporation, AQWEST and Busselton Water and compared it to the projected expenditure of each authority at the time of the 2005 pricing inquiry conducted by the Authority. A review of the proposed capital and operating over the next five year period of each authority has also been conducted for the purposes of this report.

Our Methodology

The process undertaken for our review of Water Corporation, AQWEST and Busselton Water involved the following steps:

- Inception meeting with the Authority
- Detailed Interviews with the agencies
- Detailed analysis
- Submission of Preliminary Draft Report
- Additional analysis
- Submission of Draft Report
- Submission of Final Draft Report

Our Findings

Overview

Our review of the Water Corporation's capital and operation processes, and historical and proposed expenditure, has resulted in the following recommendations.

Corporate / strategic planning

While a direct linkage of strategies and objectives between the SAMP and the SDP is not critical issue, it does provide a clear and accountable explanation of the various business strategies and priority areas back through the document hierarchy, ensuring consistency with the Water Corporation's Purpose and its Business Story. We would recommend that the Water Corporation seek to investigate this issue.

The specific business priorities in the SCI mention the four key priority areas identified in the SDP however there are another twelve business priorities included. There is no mention in the SCI that four of the areas were, in the SDP, highlighted as strategic priorities. This lack of consistency gives the impression that the four strategic areas are perhaps not as important as indicated in the SDP. We would recommend that the Water Corporation investigate this issue.

We see no specific reason why the SDP could not be made into a public document consistent with the Corporation's status as a public utility. We would recommend that the Water Corporation investigate this issue.

Capital processes

We believe that the Corporation will be in a position to continue to improve its performance in relation to delivery of its capital investment program over the coming regulatory period. We expect that this will be reflected in an improvement of KPI scores which measure the time management of completed projects and the number of projects completed within 20 per cent of target cost by Project Practical Completion.

Based on our review of sample documentation, we are satisfied that the Corporation has in place robust procedures for the delivery of its capital investment projects.

Based on our review, we consider that the procurement and delivery strategies currently adopted by the Corporation are innovative and encourage competitive delivery of the capital investment program.

Operations processes

We recommend the Corporation continue to endeavour to achieve the current 2 per cent efficiency target. We are confident that the Corporation can continue to achieve the target based, noting that the Corporation has itself stated that it has successfully achieved the target in the past.

We noted during our interviews with the Corporation that the standard of operating funding requests varied significantly from Division to Division. We believe there is significant scope for improvement in the quality of funding requests by requiring Divisions to undertake a formal review of Divisional requests before submission to the Evaluation Committee. This would improve the overall quality of requests that the Evaluation Committee views, whilst continuing to foster a culture of continuous improvement.

While we note that the Action Briefs are based on a summarised business case, we recommend that the Corporation should seek to improve the level of information and detail provided by process owners in the Action Briefs to better inform the macro budget process.

Historical and Proposed Expenditure

Based on our high-level analysis of the Corporation's historical capital expenditure and the Corporation's actual performance against budgeted capital expenditure, we have not identified any inappropriate historical capital expenditure.

We believe that once the Southern Seawater Desalination Plant is fully commissioned, the Corporation should consider undergoing an internal review of its capital planning and delivery processes to test whether they are still adequate to deliver the increased capital works program that is expected from 2012-13 onwards.

We have reviewed the Corporation's proposed energy procurement strategy for the desalination plant and believe that the proposed strategy is currently unjustified.

With the exception of 2007-08, we would have expected the Corporation's actual expenditure performance against budgets to be better given the relative sophistication and robustness of the capital and operational processes in place. Going forward, we believe that the Corporation should be able to consistently achieve actual expenditure within a target range of plus/minus of five percent.

Our review of the Corporation's capital and operational planning processes gave us confidence that the proposed expenditure could, if the systems in place are appropriately implemented, be delivered within the period from 2009-10 to 2013-14.

However, due to time constraints, we have not been able to undertake a detailed review of the proposed capital or operating expenditure to fully assess whether the expenditure is efficient. We have identified a number of significant increases in proposed expenditure that are not fully explained.

We would recommend that the Authority undertake a detailed review of increases in capital and operating expenditure over the base year and a specific review of the top 10 capital projects.

1 Introduction

1.1 General

The Economic Regulation Authority (the Authority) was established on 1 January 2004 and is the independent economic regulator for Western Australia. The Authority regulates monopoly aspects of the gas, electricity and rail industries and licenses providers of gas, electricity and water services.

The Authority also inquires into matters referred to it by the Western Australian Government. These matters can relate to regulated and non-regulated industries in the areas of pricing, quality, business practices and compliance costs.

A previous inquiry by the Authority in 2005 examined the water and wastewater pricing of the Water Corporation and the water pricing of the Bunbury and Busselton Water Boards. It is our understanding that this review focussed more on the development of the regulatory frameworks for the three service providers rather than the quantum of the capital and operating expenditure proposed.

The Authority's functions are designed to maintain a competitive, efficient and fair commercial environment for the benefit of the Western Australian community, particularly where businesses operate as natural monopolies.

The Authority has received a Terms of Reference from the Western Australian Government to conduct an inquiry into the tariffs of the Water Corporation, AQWEST (Bunbury Water Board) and Busselton Water Board.

To assist in addressing matters raised in the Terms of Reference, the Authority has engaged Halcrow as an expert engineering consultant to provide a report to the Authority, which establishes the efficiency of capital and operating expenditure by the Water Corporation, AQWEST and Busselton Water Board. The review will cover both historical capital and operating expenditure since the 2005 pricing inquiry, and projected capital and operating expenditure.

1.2 Scope of Services

1.2.1 *Objective*

The objective of the review is to:

- Provide a report to the Economic Regulation Authority on the efficiency of capital and operating expenditure by the Water Corporation, AQWEST and Busselton Water Board.

1.2.2 *Project Tasks*

For each service provider, Halcrow has been engaged to undertake the following tasks:

Capital expenditure

- Compare actual capital expenditure over the period since the 2005 pricing inquiry to the projected capital expenditure for that period, and
  - Investigate the reasons for any substantial differences between projected and actual expenditures, and
  - Identify any capital expenditure that was not appropriate.
- Examine the processes used by the utilities to approve capital expenditures and determine whether, and how, those processes can be improved to ensure efficiency in capital investments, and
- Identify any planned capital expenditure that is not appropriate.

Operating expenditure

- Compare actual operating expenditure over the period since the 2005 pricing inquiry to the projected operating expenditure for that period, and to investigate the reasons for any substantial differences between projected and actual expenditures, and
- Examine projected operating expenditure, cost drivers and processes, and determine the scope for efficiency gains in comparison to past performance and other service providers.

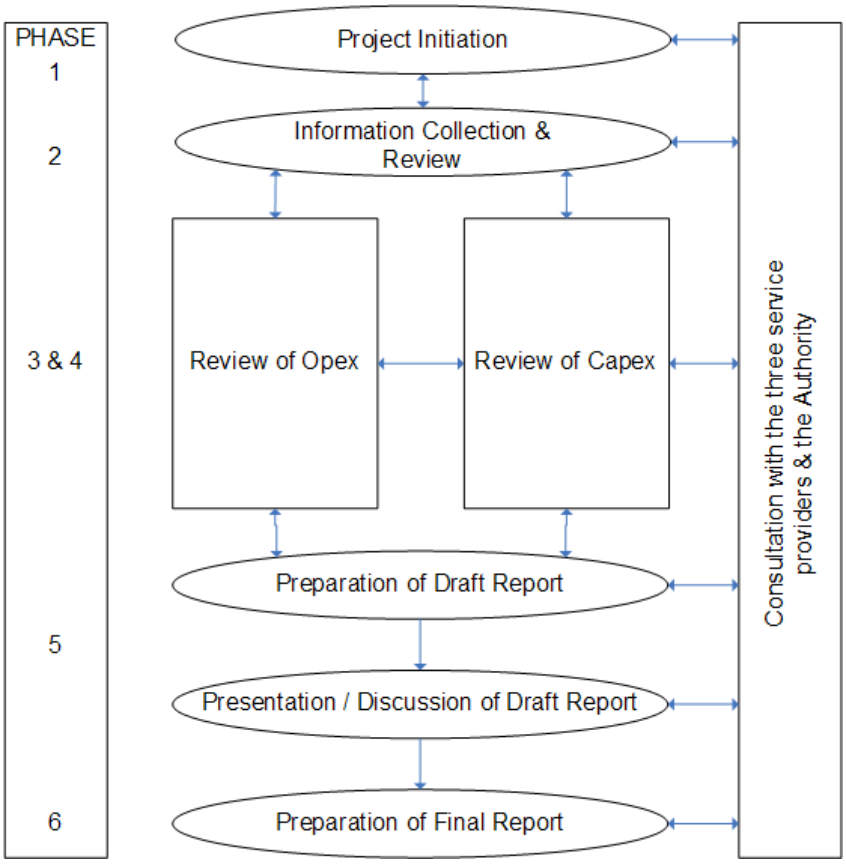
A Final Report is to be provided that comprehensively documents the findings of the review conducted, addressing the project tasks listed above.

1.3 *Our Approach*

Our overall approach to the review is summarised in Figure 1.1 below, and essentially involve six stages or phases.

The focus of the review has been the capital planning and delivery processes of Water Corporation, AQWEST and Busselton Water. By reviewing the capital planning and delivery processes of an organisation, it is hoped we will gain a level of understanding of the adequacy, appropriateness, robustness and rigour of those processes. Should we, upon analysis and review, be confident with the level of adequacy, appropriateness, robustness and rigour of an organisation's capital processes, then we can also be reasonably confident in the appropriateness of any resulting capital and related operating expenditure.

Figure 1.1: Halcrow's approach to the review



1.4 Review Process

The process undertaken for our review of Water Corporation, AQWEST and Busselton Water involved the following steps:

- Inception meeting with the Authority
- Detailed Interviews with the agencies
- Detailed analysis
- Submission of Preliminary Draft Report
- Additional analysis
- Submission of Draft Report
- Submission of Final Draft Report

1.5 Operational Frameworks

1.5.1 General

The water industry in Western Australia is dominated by the Water Corporation, as the largest utility in the state however a total of 29 water services licences are currently registered with the Economic Regulation Authority including:

- the Water Corporation – water supply, sewerage, irrigation and drainage supply
- AQWEST – Bunbury Water Board – water supply
- Busselton Water Board – water supply
- Hamersley Iron – sewerage and non-potable water supply
- Rottnest Island Authority – water supply, sewerage and drainage
- the Shire of Denmark – non-potable water
- 20 local government authorities – sewerage and non-potable water, and
- Gascoyne Water Cooperative, Harvey Water (SWIMCO), Ord Irrigation Cooperative and Preston Valley Irrigation Cooperative – irrigation and non-potable water.

1.5.2 Water Corporation

The Water Corporation was set up under the *Water Corporation Act 1995* and is fully owned by the Western Australian Government. It is the largest water industry service provider in the state and was set up to managing water, wastewater, drainage, and irrigation services over an area of more than 2.5 million square kilometres and servicing almost 2 million customers. The Water Corporation was granted a licence to provide services by the Economic Regulation Authority on 28 June 1996 and this licence will expire on 28 June 2021.

The Water Corporation is governed by a Board of Directors (seven in total), who are all, apart from the Chief Executive Officer, non-executive directors. The Minister for Water is the ultimate shareholder of the Water Corporation.

As indicated previously, the Water Corporation is the largest water service provider in the state, providing services to almost 2 million residents over an area of more than 2.5 million square kilometres. The Water Corporation currently employs a staff of over 2,400 people divided across seven key business groups.

The Water Corporation generally funds the some of its capital works through debt however they are somewhat constrained in this area. The State Government have placed a limit on their debt to revenue ratio of 47 per cent. While the Water Corporation's own debt to total assets ratio is less than 20 per cent, the Water Corporation's debt currently represents about 48 per cent of the State's entire debt, illustrating the size of the impact that Water Corporation's operations have on Western Australia's finances.

While this limit puts a substantial capital constraint on the Water Corporation, we note that the Corporation has in place a comprehensive, risk-based prioritisation process for their proposed expenditure. It is not unreasonable to assume that had this capital constraint not been in place then such a comprehensive process might not have been developed. Further discussion of the Corporation's prioritisation processes can be found in section 3.2.

All increases in debt for capital works must be approved by the Minister for Water Resources and we note that this potentially represents an additional constraint on the Corporation's expenditure programs.

In 2007-08, half of the Water Corporation's capital investment program was funded from net operating cash flows with the remainder of $393 million funded from new borrowings. The Water Corporation's net debt increased by over 22 per cent in 2007-08 to around $2.2 billion. Given that net debt in 2005-06 was $1.44 billion, the current debt value represents an almost 60 per cent increase since the 2005 pricing review.

The Water Corporation also receives additional funding from the State Government where the costs of implementing capital projects are not adequately offset by the likely revenue. This additional funding is provided as a Community Service Obligation.

The Water Corporation is required to pay a dividend to the State Government and in most years this dividend has equated to approximately 85 per cent of the Corporation's profit.

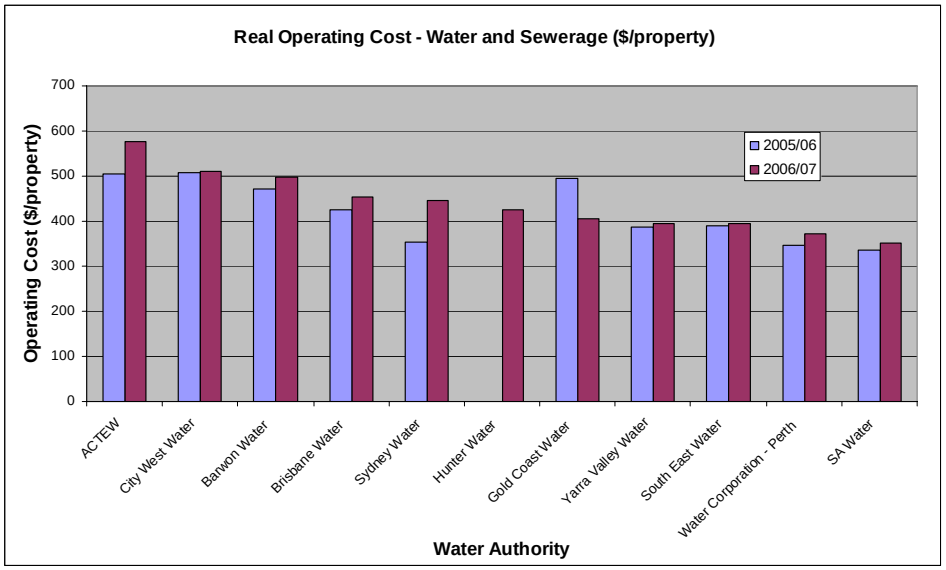
1.6 Benchmarking

1.6.1 National Performance Report

The National Performance Report for Urban Water Utilities for 2006-07 ranks the Water Corporation against other water authorities of comparable size against 150 key performance indicators. As the benchmarking is against other urban water utilities, only the Water Corporation's Perth metropolitan operations are included within the analysis.

Of the eleven urban water utilities reported on in the 2006-07 report, the Water Corporation was ranked second lowest in terms of real operating cost per property for its water and sewerage operations. The results of the benchmarking are shown in the following graph.

Figure 1.2: Real Operating Cost – Water and Sewerage ($/property)



As operating costs are highly dependent on network characteristics and other operational factors, only limited conclusions may be drawn from this analysis. However, it is interesting to note that SA Water, which possesses similar operating characteristics to the Water Corporation, reported similar levels of operating expenditure per property. The following graphs split out the water and sewerage real operating cost per property for 2005-06 and 2006-07.

Figure 1.3: Real Operating Cost – Water ($/property)

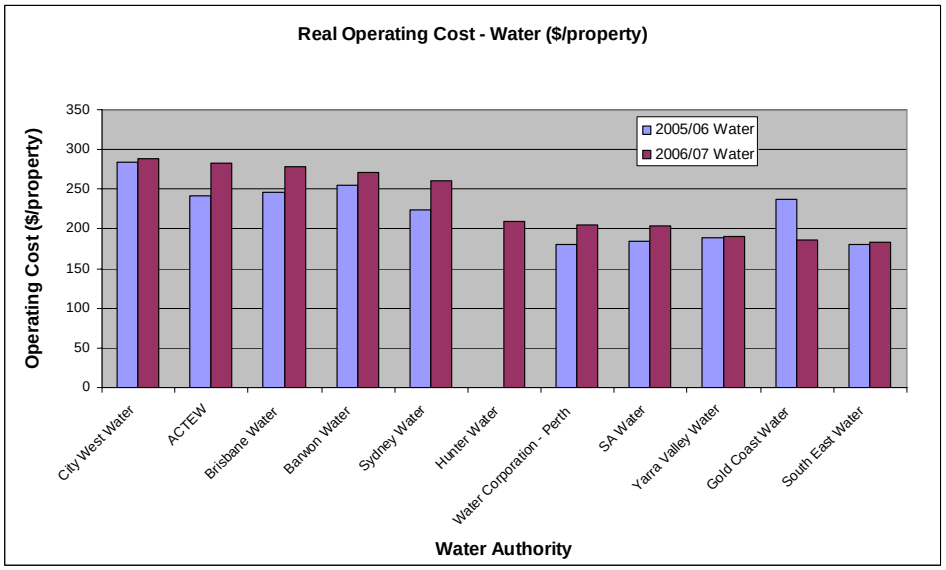
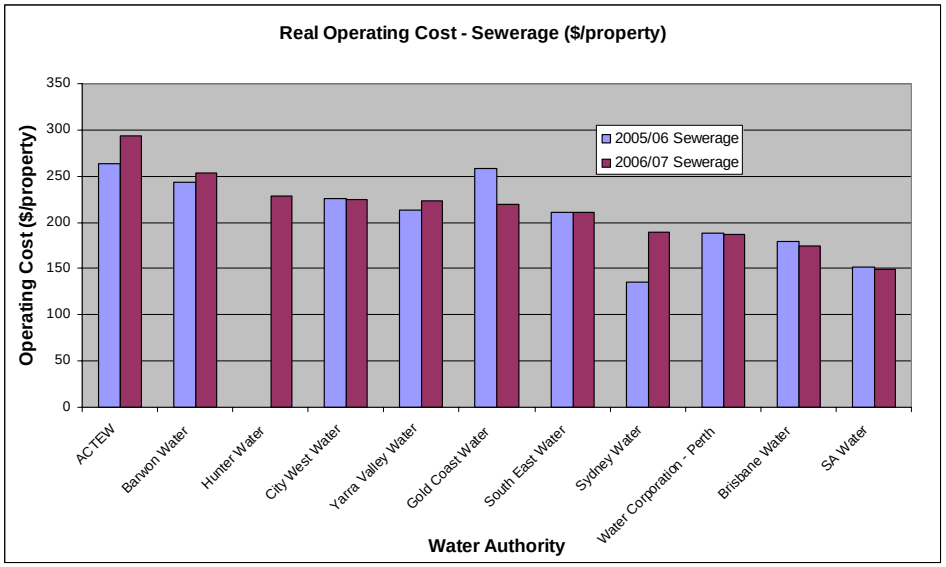


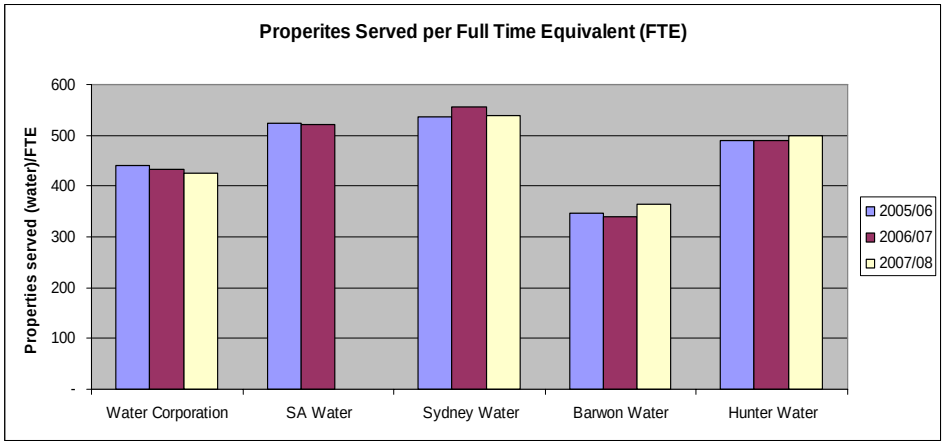
Figure 1.4: Real Operating Cost – Sewerage ($/property)



Although we note that the Water Corporation has claimed efficiency savings in its operating expenditure since 2006-07, the graphs indicate that there may be an opportunity for the Water Corporation to increase productivity over current levels, particularly in relation to water service operating expenditure.

We have also completed a high level benchmarking analysis of properties served (water service) per Full Time Equivalent (FTE) employee. Our analysis is based on the Annual Reports of a number of water authorities throughout Australia. As we have been unable to split out the FTE data between water and sewerage services, we have calculated the ratio using water service properties data. The results of our analysis are included within the graph below.

Figure 1.5: Properties Served per Full Time Equivalent employee



As shown in the above graph, the Water Corporation serves a lower number of properties per FTE than all but one of the water utilities reviewed. The size and the geographical area serviced by each water utility are likely to have a significant impact the on number of FTE staff, and hence only limited conclusions can be drawn from the above analysis. However, we note the significant difference between Water Corporation and SA Water, which have similar operating characteristics. The lower ratio may indicate the potential for additional productivity gains to be realised through a review of headcount.

1.6.2 *Specific benchmarking with SA Water*

In addition to national benchmarking, the Water Corporation has previously compared operating costs against South Australia Water Corporation in a specific benchmarking exercise as reported in a 2004 report. The following sections provide a brief overview of the report and the key analysis and outcomes. Although slightly dated, the benchmarked data was from 2002/03, the comparison between the businesses and the reasons provided for differences are useful in this review.

The Water Corporation conducted a detailed benchmarking exercise with SA Water, which was chosen for its low cost benchmark and the similarities between the two businesses in terms of supply conditions and number of properties connected. It is useful, prior to benchmarking the agencies to provide a quick comparison of the two businesses; as shown in Table 1.1.

Table 1.1 Asset and performance details – Water Corporation and SA Water (2006/07)

	Prop. Served water	Prop. Served sewer	WTPs (No.)	Water Mains (km)	Prop. served per km of water main	Sewer mains (km)	Prop. served per km of sewer main	Water main breaks (per 100 km)	Sewer main breaks / chokes (per 100 km)
Water Corporation	**680,000**	**603,000**	**8**	**12,527**	**54**	**10,502**	**57**	**13.1**	**22.5**
SA Water	**504,000**	**475,000**	**6**	**8,918**	**57**	**7,070**	**67**	**27.0**	**65.8**
Australian average (similar size businesses	**514,000**	**487,000**	**4**	**7,681**	**63**	**7,364**	**64**	**39**	**37**

Source: *National Water Performance Report 2006-2007 Urban Water Utilities.*

Figure 1.6 following presents the data used for the benchmarking.

Figure 1.6: Operating Costs per property served for water and wastewater 2002/2003

	Operating Costs Water	Capital Cost Water	Operating Costs WW	Capital Cost WW
SA water	173.74	245.1	120.02	235.51
Water Corporation	$144.94	$298.9	$143.33	$446.42
Australian Average	$202.26	$264.14	$194.18	$274.89

Source: WSAAfacts 2003

The comparison, based on the data presented in Figure 1.6, reveals that:

- Operating costs for water and wastewater benchmark relatively well against SA Water and the listed Australian average.
- Wastewater operating costs are slightly higher than SA Water
- Capital costs for water and wastewater are both higher than SA Water and the Australian average with wastewater capital being significantly higher (90 per cent higher)

The Water Corporation offers a number of explanations for the significant difference in wastewater capital cost including:

- Lower density development in Perth
- Differing asset values (values set higher in Perth for equivalent assets) due to infrequent asset revaluations
- More conservative asset lives which affect depreciation and therefore annual capital cost
- Some equivalent assets are more expensive per unit, for example, the average pumping station cost in Perth is almost $1 million (as at 2004) while the equivalent average cost in Adelaide is $120,000
- Differing levels of service standards leading to more complex operational requirements and correspondingly larger operational costs.

We have insufficient information to investigate this issue in more detail or arrive at justifiable conclusions. If further investigative work is undertaken to review capital and operating expenditure, such conclusions may be possible.

1.6.3 *Operational efficiency targets*

We have undertaken a brief benchmarking exercise to identify the various efficiency targets utilised by other regulators in Australia and internationally. This review has been at a high level only and has relied on publicly available information and our own knowledge and experience.

Efficiency targets are widely adopted by regulators in the water industry as a means of promoting efficiency in these monopoly industries. As the method by which economic regulators estimate and apply efficiency targets varies both in Australia and internationally, only limited conclusions may be drawn from any comparison of the efficiency targets applied to different water companies. However, it is evident that there is still scope for continuing efficiency gains to be made within the water sector as a whole.

In the following paragraphs we provide a brief overview of the approach to efficiency adopted by the Independent Pricing and Regulatory Tribunal (NSW), the Essential Services Commission (VIC) and that adopted by Ofwat (the economic regulator in the UK).

In setting efficiency targets, IPART bases its assessments on advice from technical consultants and its own estimates of what efficiency gains can be achieved over the determination period.

In its pricing determination for Sydney Water's in 2008, IPART indicated that the efficiency assessment involved analysing the efficient operating and capital costs of providing appropriate levels of service over the determination period. In calculating this requirement, IPART then formed a view on the efficiency gains that Sydney Water could reasonably achieve during this time. IPART recommended an annual continuing efficiency target of 0.8 per cent and a catch up efficiency target of 1.0 per cent (for each year of the determination period). This resulted in a combined efficiency target of 1.8 per cent per annum. IPART applied the efficiency savings only to the controllable costs, and it made an allowance for efficiencies already identified by Sydney Water in its pricing submission.

Anecdotal evidence indicates that Sydney Water also set a number of other internal efficiency targets by reducing the base budgets for specific business groups. It is believed that these are in addition to the overall efficiency targets set by IPART.

The Essential Services Commission provides guidelines to the water businesses and expects businesses to be able to demonstrate an average annual productivity improvement of 1.0 per cent per annum on business as usual expenditure. The target is a growth adjusted target, that is, growth related expenditure adjustments are added to the business as usual operating expenditure before the 1.0 per cent productivity reduction is applied.

In the UK, Ofwat assesses the scope for efficiency by the water industry as a whole when determining what efficiency target to apply to water and sewerage companies. In broad terms, it considers efficiency in three categories:

- general efficiency – the prospect for the industry as a whole to become more efficient
- catch-up efficiency – company specific efficiency
- continuing efficiency – the assumption on how much all companies can improve.

Ofwat's decisions on both the company specific and continuing efficiency are consistent with its assessment of 'general' efficiency.

In the most recent pricing review (2004), Ofwat estimated that the likely overall scope for water operating expenditure (base) was 2.4%. For new water operating expenditure (enhancements), the scope was assessed as 2.7%. In its pricing determination Ofwat assumed efficiency targets of 1.4% per year for water operating expenditure (base), and 1.85% for new water operating expenditure (enhancements). Similar targets were assumed for the sewerage service. The difference between the overall efficiency scope and the efficiency targets built in the pricing determination provided companies with an incentive to out-perform.

Catch-up efficiencies, in addition to these general efficiency targets, were also applied to companies that were assessed as being less efficient than those on the efficiency frontier. Assumed catch up factors for the water service ranged from 0% for companies on the frontier, to 2.7% a year for companies in the lowest efficiency banding, and 0% to 1.5% a year for the sewerage service.

Ofwat has indicated its intent to maintain the approach that it adopted in 2004, for the coming pricing determination in 2009.

1.7 Issues Arising from Previous Reviews

1.7.1 *ERA Pricing Review 2005*

On 4 November 2005, the ERA published its Final Report: Inquiry on Urban Water and Wastewater Pricing in relation to Water Corporation, AQWEST and Busselton Water. The ERA, as part of this report, made 38 recommendations. While the majority of these recommendations related to the setting of water and wastewater prices, we have identified the following recommendations that relate to our report:

- Recommendation 1: Information systems be further developed including market intelligence to support the introduction of cost based systems to govern the revenue requirement of each water business for this and future periods
- Recommendation 5: A "building block" methodology should be applied to determine revenue requirements for each water business
- Recommendation 8: Cost forecasts used in the determination of revenue requirements for each service provider should incorporate efficiency gains reasonably envisaged to be achievable over the period of the forecast
- Recommendation 16: The Authority is satisfied that the Corporation is providing its services in accordance with standards and requirements imposed by the terms and conditions of its licence. The Authority does not consider that the Corporation requires additional financial resources – and hence higher prices and revenues – to meet these standards and requirements
- Recommendation 17: While the Corporation has assessed its customers' willingness to pay for improvements to unregulated services, the Authority considers that additional work using more reliable methods may be warranted.
- Recommendation 22: For the purpose of determining the revenue requirement of the Corporation, the Corporation's forecast of operating costs should be adjusted to reflect an efficiency gain in real operating costs per connection of 1.25 per cent per annum.

2 Corporate / Strategic Planning

2.1 General

This section provides an overview of the Corporate and Strategic Planning frameworks of the Water Corporation as it relates to the delivery of capital and operating expenditure.

An effective corporate/strategic framework enables an organisation's vision and mission to be reflected in its objectives. For the purpose of clarity, objectives set at this level are the results the organisation seeks, to maximise the expectations of stakeholders in the medium term.

Once objectives are in place, strategies to deliver these objectives can be developed. Strategies are the broad direction in which the organisation needs to move, in order to achieve its objectives. It is at this point that corporate planning typically ends and operational plans to deliver the strategies are developed. Hence strategies form the link between objectives and actionable plans.

It is this link between objectives and actionable plans that makes examination of the corporate planning process an important element in this review. For actionable plans to be 'effective', a clear link to objectives and strategies is essential. Without this link a plan may still deliver reasonable outcomes, however whether these outcomes are fully consistent with the agreed direction of the organisation is less clear.

There is no one 'correct' framework for corporate planning, but a framework should establish:

- Stakeholder expectations
- Clear linkages as each process breaks down to a greater level of detail
- Defined roles and responsibilities
- Review mechanisms

2.2 Overview of the framework

2.2.1 General

The Water Corporation's overall corporate planning process includes a combination of organisation-wide plans. Key outputs of corporate planning, as part of the corporate business planning cycle conducted by the Corporation include the following:

- Strategic Asset Management Plan (SAMP)
- Strategic Development Plan (SDP)
- Statement of Corporate Intent (SCI)
- Capital program
- Deliver Services Plan (DSP)
- Service Customers Plan (SCP)
- Our Business Direction

Figure 2.1 below provides a basic outline of the framework, as prepared during our interviews, showing how the various documents interact with each other and identifying the duration of each document. Figure 2.2 shows how the various documents fit into the overall business planning framework.

The sections following provide a brief commentary on the key documents, that is, the Strategic Asset Management Plan, the Strategic Development Plan and the Statement of Corporate Intent.

Figure 2.1 The Water Corporation's Strategic framework

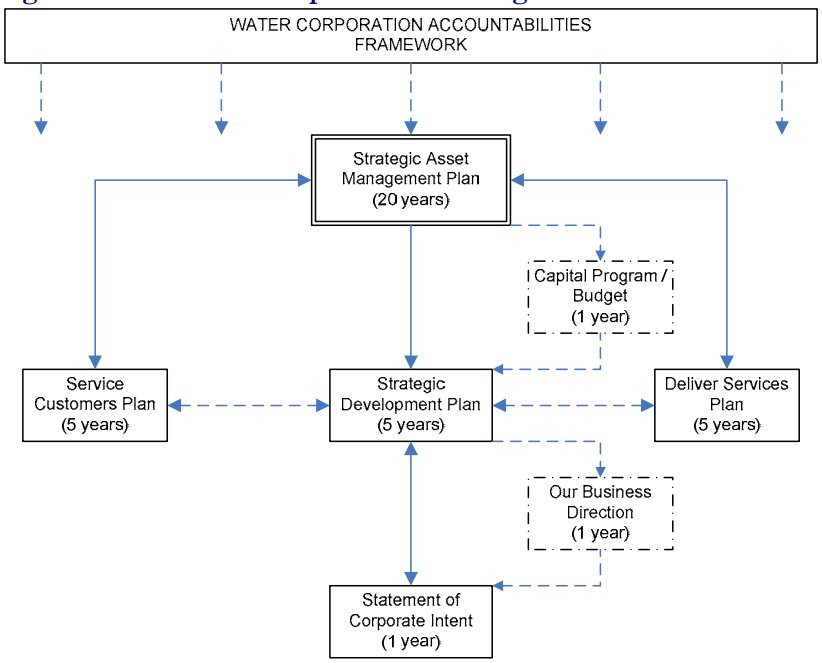
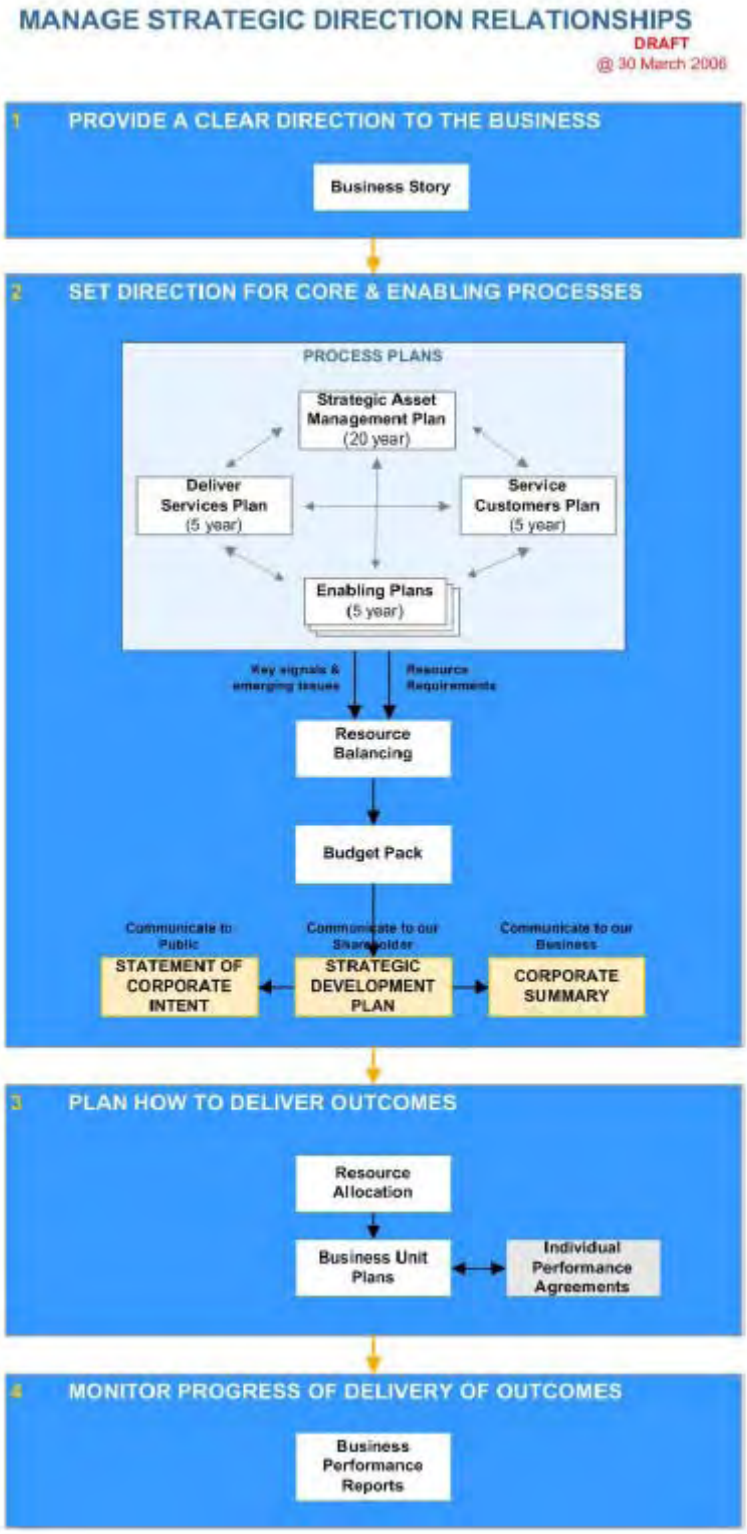


Figure 2.2 The Water Corporation's Overall Business Planning Relationships



Source: Water Corporation

2.2.2 *Strategic Asset management Plan*

The asset management framework of the Corporation is defined within the Strategic Asset Management Plan (SAMP). The Water Corporation states that the SAMP's purpose is to "*provide a clear, sustainable, strategic direction for asset management*". Further, the Water Corporation states that the SAMP will be "*evolve to a more comprehensive strategic business plan integrated with other core process plans to provide strong direction to the Strategic Direction* [sic] *Plan and Statement of Corporate Intent.*"

The structure of the SAMP is based around the process structure included in the Water Corporation's Accountabilities Framework, including three core processes and four enabling processes:

- Plan Infrastructure Assets
- Acquire Infrastructure Assets
- Manage Infrastructure Assets

} Core Processes

- Manage Drinking Water Quality
- Manage Non-Drinking Water Quality
- Manage Wastewater Processes
- Manage Drainage

} Enabling

The SAMP follows the recognised methodology of identifying the current state, developed a desired state for asset management and then formulating strategies and actions necessary to move from the current state to the desired state. The desired state phase in the SAMP identifies a number of key features with each of these features including a number of individual statements further defining the desired state. The key features are:

- "*Our customers are our greatest advocates;*
- *Our asset management is recognised as providing excellent and sustainable outcomes; and*
- *Asset Management is a great place to work*".

The SAMP also outlines a number of critical strategy areas for the asset business, that is:

- "*Investing for the future – Capital Investment Program delivery;*
- *Better understanding of asset condition, asset performance and the links between condition and performance;*
- *Enhanced data and systems for better asset related decisions;*
- *Optimised asset maintenance;*
- *Up to date planning;*
- *Asset renewals and refurbishment program;*
- *Sustainability;*

- *Fostering research and development and innovation through a collegiate approach with other utilities;*
- *People strategies (through HR processes) to ensure sufficient competent staff to manage and operate asset processes.*"

The SAMP states that these key features are consistent with the Water Corporation's Purpose and its Business Story, however we have not sighted these documents so can not verify this statement. As a minimum, it would be expected that the key features and the critical strategies in the SAMP reflect the broader statements outlined in the Water Corporation's Purpose and its Business Story.

2.2.3 Strategic Development Plan

The Strategic Development Plan (SDP) is the document that sets out the five year direction of the Corporation and the requirement for it to be prepared is contained within the *Water Corporation Act 1995*.

The SDP's stated purpose is to clearly identify "*the Corporation's business priorities having regard to our responsibilities defined within legislation and our commitment to sustainability*". The SDP makes reference to the Water Corporation's business purpose, three key features of a desired business state, five key business strategies and a set of four, Board endorsed, strategic priorities that are designed to "*best position the organisation for the future.*"

The five key business strategies are:

1. "*Genuinely engage with our stakeholders*
2. *Change the way we think and work*
3. *Core business – rock solid*
4. *Security through Diversity*
5. *Creating a great place to work*"

The four key strategic priorities are:

1. "*Our Customers*
2. *Our People*
3. *Process Improvement*
4. *Private Sector Participation*"

The SDP lists a number of key business assumptions which are central to the Water Corporation meeting its financial goals. These are:

- "*Dividend Policy;*
- *Growth of Regulated Services;*
- *Inflation;*

- *Operating Cost Index;*
- *Water Source Planning;*
- *Sustainability;*
- *Developers' Contributions* and;
- *Capital Structure & Debt*".

A comparison of the five key business strategies, the four key strategic priorities and the key business assumptions identified in the SDP against the key features of the desired business state and the critical strategy areas identified in the SAMP reveals that there appears, on initial review, to be no consistency in these areas between the two documents.

Figure 2.1 shows that the SDP is informed by the SAMP and, as a result, we would therefore expect there to be clear linkages between the two documents. Such linkages might include direct cross-referencing of strategies and objectives between the SDP and the SAMP, direct explanation of how the strategies and priorities in the SDP are consistent with or directly result from the desired business state and critical strategy areas in the SAMP.

However, we have identified no direct alignment between the two strategic documents. While a direct linkage of strategies and objectives between the SAMP and the SDP is not critical issue, it does provide a clear and accountable explanation of the various business strategies and priority areas back through the document hierarchy, ensuring consistency with the Water Corporation's Purpose and its Business Story.

The Water Corporation stated that this misalignment can, be explained partly by the timing of when the documents are produced. The SAMP was drafted in December 2005 and published in March 2006 and has not yet been updated, while the SDP is an annual product. After raising this issue with Water Corporation, we would expect the 2008 SAMP and the next SDP (for the years 2009-10 to 2013-14) to have improved linkages. Water Corporation has stated that future documents will have greater alignment due to the timing of the document development and due to improvements made to the processes involved in preparing these documents.

The Water Corporation also stated that the SDP has a rolling five-year outlook with a whole-of-business focus, while the SAMP is produced every second year with an emphasis on asset management. While this may be the case, we would still expect there to be consistency of strategic objectives between these documents.

2.2.4 *Statement of Corporate Intent*

The Statement of Corporate Intent (SCI) is closely related to the SDP and in fact it "*sets out a more detailed view of the business objectives, targets and priorities for the first year of the SDP.*" The SCI, as in the SDP, makes reference to the business purpose, the desired state and the key business strategies. The SCI identifies some specific business priorities for 2008/09 which are grouped under the five key business strategies, that is:

1. Genuinely engage with our stakeholders – stakeholders and customers
2. Change the water we think and work – sustainability, process improvement and private sector participation
3. Core business – rock solid – delivering effective services, optimising asset management, providing quality products to our customers, managing wastewater, protecting the environment
4. Security through Diversity – reduce demand for water, optimise efficient capture and use of available water, develop new water sources that are not dependent on rainfall, Water Forever
5. Creating a great place to work – our people, our safety and health

These specific business priorities closely align with and, in fact, are categorised under the actual business strategies identified in the SDP. This is to be expected, though, given that the SCI presents the actions required in the first year of the SDP. The specific business priorities in the SCI mention the four key priority areas identified in the SDP however there are another twelve business priorities included. There is no mention in the SCI that four of the areas were, in the SDP, highlighted as strategic priorities. This lack of consistency and a clear linkage, gives the impression that the four strategic areas are perhaps not as important as indicated in the SDP.

The Water Corporation have stated that "The SCI and SDP have common Strategies (Change the way we think and work, Core Business - Rock Solid, Security through Diversity, Genuinely Engage with our Stakeholders and Creating a great place to work). It is important the SCI describes these in a way that reflects the current focus for our business, including key projects, for the 2008/2009 financial year. They exist as a 'Portfolio' of actions and initiatives. As a public document, this aids with clarity of role expectations within the Business with the focus being on the first year.

The SDP discusses those that are expected to have the greatest potential impact on our operating model over the years to come, but is only a subset of the overall portfolio of activities or initiatives of the organisation. Any omission in the SDP of any areas noted in the SCI is not because of their lack of importance, but more due to the priority given to addressing them in the first year. Furthermore, as a confidential document - the SDP can discuss strategic directions that may be unsuitable for inclusion in the SCI."

The Water Corporation's explanation for the role of the SDP and the SCI indicate that rather than having a clear document hierarchy, the Water Corporation instead has a collection of individual documents with some linkages, but mostly separate objectives and strategies. This is not what would be expected of an efficient and sophisticated organisation.

We also see no reason for the SDP to be considered a confidential document. The Corporation is a publicly owned utility and the way it operates should not be kept secret from its customers.

2.2.5 State Wide Planning Program

The State Wide Planning Program identifies the infrastructure asset solutions which need to be implemented to enable the Corporation to meet its service requirements. The majority of these solutions involve the acquisition of infrastructure assets. Service requirements include both the growth in demand and the requirements of the Corporation's operating licences.

2.2.6 Capital Investment Program

The Capital Investment Program consolidates all capital expenditure proposed by the Corporation. The Capital Budget is derived from the approved Capital Investment Program and forms a key part of the Corporation's SDP.

2.3 Key business drivers

The Strategic Asset Management Plan indicates that there are a number of different drivers for the various strategies and programs discussed. These drivers are summarised below:

- Capital program drivers
  - Increasing asset replacement and rehabilitation needs;
  - Population growth;
  - Climate change;
  - New standards; and
  - Changing levels of service and community expectations.
- Capital investment program drivers:
  - Accelerated water source development to meet the effects of climate change;
  - Improvements in water quality;
  - Minimising wastewater overflows;
  - Meeting growth requirements; and
  - Providing for asset replacement and renewal.
- Overall business expenditure drivers
  - Supply and demand;

- Enhanced service;
- Quality and standards; and
- Base capital.

The overall business drivers listed above are similar to the investment drivers that are common to most water / wastewater companies, which are:

- Renewals/replacements – based on condition and asset lives
- Levels of Service Improvement – efficiency, risk mitigation, regulatory and standards compliance
- Growth – new demand usually necessitating new assets

2.4 *Risk management approach*

In 2004 the Corporation decided to take an integrated and holistic approach to the management of risk. The reasoning behind this new direction was to standardise their approach to risk management by providing one principle across the business for risk assessment (analysis & evaluation) as governed by the Risk Management Framework.

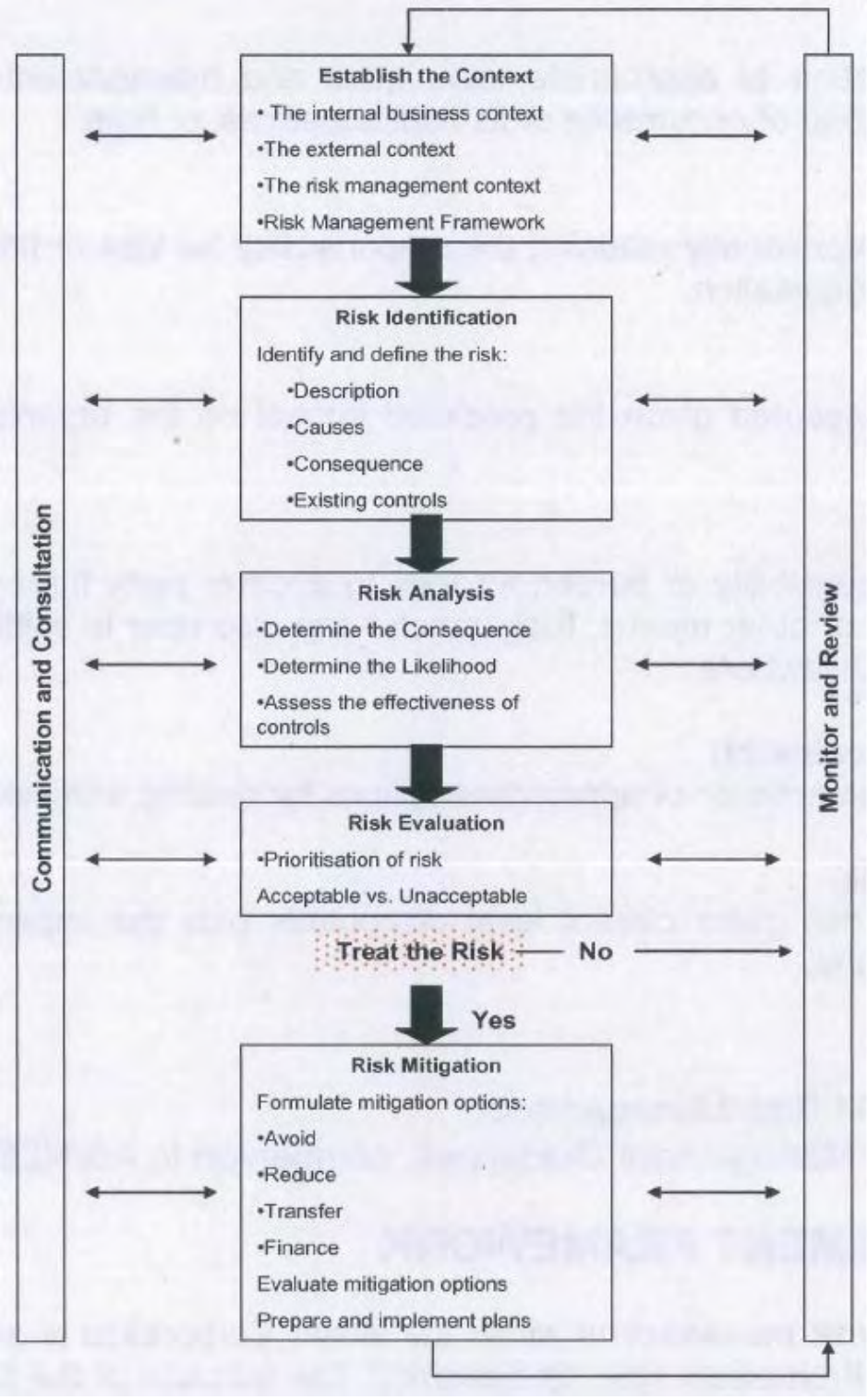
The governing policy for the Risk Management Framework was developed to provide guidelines for risk management, complying with the 2004 Australian and New Zealand Standard (AS/NZ 4360:2004) and being consistent with the WA Government Risk Cover approach.

The application of the Risk Management Framework is designed to ensure consistency of risk management practices across all levels of the business including at the Strategic, Tactical, Operational and Project levels.

Consistent with the Corporation's "(Our) Business Direction 2008-2009" document, the strategic risk management level is focussed on the identification and management of risks that impact on the strategic direction and 'desired state' of the business. At the tactical and operational levels, the focus and the context for risk management relates to risks affecting the process of the organisation (and associated management systems) and its service delivery and process integration respectively. Project risks are managed to address either the capital or non-capital risks specific to project delivery.

The five elements that the Corporation have used to derive their Risk Management Framework process (as adapted from the AS/NZ risk management standard) include the Policy, Methodology, Assessment Criteria, Reporting and Information Management (System) as shown in Figure 2.3 below.

Figure 2.3: Water Corporation Risk Management Framework



Source: Water Corporation

Our review of the Corporation's risk management approach has identified the following points:

- The approach developed is very comprehensive with the depth of integration of risk into the Corporation's processes consistent with a top-performing organisation, and
- The risk management approach provides a solid foundation for the assessment of all expenditure – without a risk priority score no expenditure is considered.

Further details of how the risk management approach is applied through the Corporation's processes can be found within individual sections of this report. Additionally, a more detailed assessment of the Corporation's risk management approach can be found in Appendix B.

2.5 Key Findings

The SAMP states that the key features of the desired business state are consistent with the Water Corporation's Purpose and its Business Story, however we have not sighted these documents so can not verify this statement. As a minimum, it would be expected that the key features and the critical strategies in the SAMP reflect the broader statements outlined in the Water Corporation's Purpose and its Business Story

While a direct linkage of strategies and objectives between the SAMP and the SDP is not critical issue, it does provide a clear and accountable explanation of the various business strategies and priority areas back through the document hierarchy, ensuring consistency with the Water Corporation's Purpose and its Business Story. We would recommend that the Water Corporation seek to investigate this issue.

The specific business priorities in the SCI mention the four key priority areas identified in the SDP however there are another twelve business priorities included. There is no mention in the SCI that four of the areas were, in the SDP, highlighted as strategic priorities. This lack of consistency gives the impression that the four strategic areas are perhaps not as important as indicated in the SDP. We would recommend that the Water Corporation investigate this issue.

We see no specific reason why the SDP could not be made into a public document consistent with the Corporation's status as a public utility. We would recommend that the Water Corporation investigate this issue.

3 Capital Processes

3.1 Overview

This section seeks to provide an overview and analysis of the capital planning and delivery processes of Water Corporation. It will review the service provider's process for adequacy, appropriateness, robustness and rigor.

By reviewing the capital planning process of Water Corporation we sought to gain a level of understanding of the adequacy, appropriateness, robustness and rigour of its process. Should we be confidant with Water Corporation's capital planning and delivery process, we can gain assurance over the appropriateness of its resulting capital and related operating expenditure.

3.2 Capital Planning

3.2.1 *General*

The following section will review the critical elements of the Water Corporation's (the Corporation) capital planning processes, including capital planning studies and investigations, project options analysis, and project prioritisation.

The Corporation has previously stated that applying capital efficiency is not simply about imposing an efficiency target of x per cent of a utility's capital program, but rather about understanding the efficiency and effectiveness of the organisation's capital planning and delivery processes.

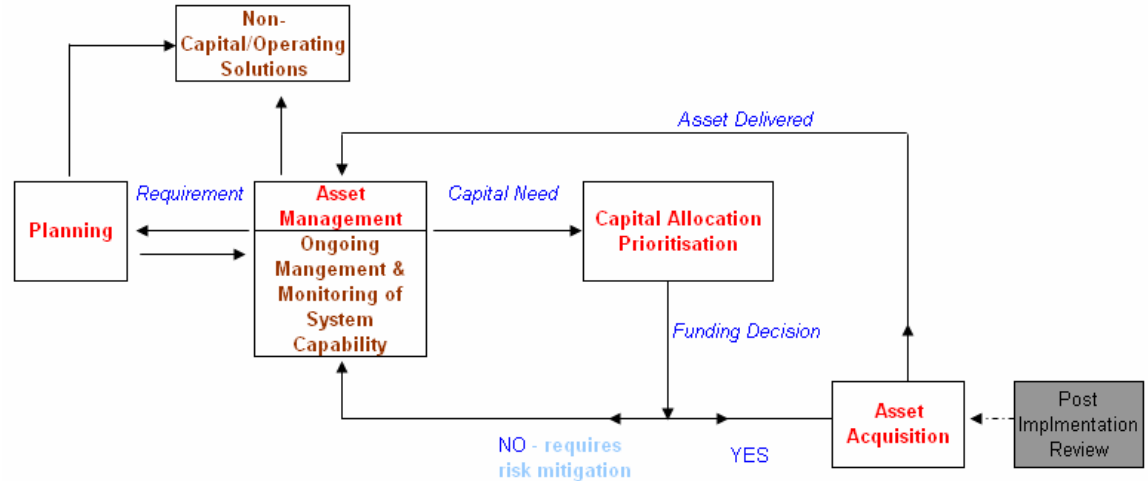
It is the view of the Corporation that the planning phase offers the greatest opportunities for efficiencies, while the least scope for efficiencies to be achieved occurs after the construction phase of the project has begun (Water Corporation's Submission to the ERA's Inquiry into tariffs of the Water Corporation, AQWEST and Busselton Water, p. 29). While the Corporation still recognises the importance of robust and effective capital delivery processes, recent efforts to improve capital efficiency have focused on the gains that can be achieved at early stages of the capital planning process.

The Corporation's overall planning direction is informed by a number of corporate statements, including the Strategic Asset Management Plan (SAMP), the Strategic Development Plan (SDP) and the Statement of Corporate Intent (SCI). While these documents have implicit impact on the capital planning processes in so much as they outline the business needs and requirements of the Corporation (as discussed in section 2) this section focus on the project and program level capital planning processes.

3.2.2 *Planning studies & investigations*

The Corporation follows a Plan, Acquire, Manage strategic framework in relation to capital planning. The Corporation's process for capital planning and acquisition is best demonstrated by the following flowchart.

Figure 3.1: Water Corporation's capital planning and acquisition process



Source: Water Corporation

There are essentially three elements to the Corporation's infrastructure and capital planning process. These are the planning process, asset management, and capital allocation/prioritisation.

As noted above, it is the view of the Corporation that the planning phase offers the greatest opportunities for efficiencies. To this end, the Corporation has established an integrated infrastructure planning process, with the essential elements of the process documented and outlined in the Planning Process Manual. The Planning Process Manual is regarded as the "authoritative source of documentation about infrastructure planning within the Water Corporation" (Water Corporation Planning Process Manual, p. 13). Where relevant, the Corporation's Asset Acquisition Guidelines also inform the planning processes, as the Corporation's guidelines are inter-related.

The Corporation's recent efforts to improve capital efficiency have focused on the gains that can be achieved at early stages of the capital planning process. The main mechanism by which the Corporation conducts capital planning is through what the Corporation terms a 'Planning Project'. The framework the Corporation has developed for the Planning Project is documented and outlined in the Planning Process Manual.

In essence, a Corporation Planning Project deals with:

- Initiating the planning project
- Agreeing to the project proposal
- Defining the project's conceptual options
- Confirmation of the planning brief
- Analysis of the viable project options
- Endorsement and acceptance of the preferred option
- Delivery of the planning business case, and
- Completion of the planning project

A Planning Project is undertaken to analyse and plan all aspects of a system or a similar issue across many systems. According to the Corporation's Planning Process Manual, a system must possess sufficient identified risks of relatively high priority to justify undertaking a Planning Project for the system. Similarly a common identified risk of relatively high priority has to be possessed by several systems to justify undertaking a Planning Project incorporating multiple systems for a strategic program.

3.2.3 *Planning project proposals*

We have reviewed the Corporation's Planning Process Manual and believe it provides a clear outline of what is required by the Planning Manager when developing a Planning Project Proposal (a Proposal). As outlined in the Planning Process Manual, the Planning Manager is responsible for developing the Proposal, the Planning Brief and managing the project so that deliverables are achieved on time and on budget.

In preparing a Proposal, the Planning Manager must prepare a draft statement that outlines business drivers requiring the project to be undertaken (please refer to section 2.3 for further discussion on the Corporation's business drivers), the risk events and issues that need to resolved, the scope of work to be covered and the broad methodology that the project team will apply to the analysis and investigation of the planning project.

It is a requirement of the Planning Process Manual that the Proposal addresses the development of planning concepts, recommendations and the business case to satisfy the following:

- Provide a vision of the future that clearly states the planning intent
- Plan for the long term, with the minimum term being 15 years
- Establish a staging plan that progressively implements long-term infrastructure
- Include all aspects of asset management on a whole-of-asset-life basis

- Establish viable options
- Use sustainability assessment in the option analysis
- Provide flexibility in the long term plan to take advantage of possible future technical innovation
- Identify and plan for future trends and community expectations that are likely to change the existing environment
- Include learning and experience gained by industry peers and industry innovators
- Share the economic burden of the planned infrastructure between the Corporation's owners, other government agencies, land developers, land owners and Corporation customers, and
- Develop a communication strategy if required.

As noted above, the Planning Manager must include the scope of work to be covered and a broad project methodology in the draft statement. According to the Planning Process Manual, the Planning Manager is required to ensure that the methodology has been developed in sufficient detail to advise all members of the project team about the scope and depth of their work tasks. This work plan provides outlines of milestones, summary tasks, detailed tasks, estimations of the duration of each individual work task and the hours of work effort required to complete each individual work task, and the percentage of team members' time required to complete the required work effort.

Before the scope of work is finalised, the Planning Manager must consult with the Asset Management Division to confirm that the proposed scope of work and planning methodology will address the identified risks. Once this consultative step is taken, the Planning Manager is then able to finalise the scope of work and make any necessary amendments to the Proposal and work plan.

Should any major differences of opinion exist in relation to the Proposal, these differences are referred to the Planning Director and Planning Program Manager (who have the authority to make final decisions about planning work scope and planning methodology) for resolution.

If the Proposal is considered to be appropriate following consultation with all necessary stakeholders, the Planning Program Manager accepts the Proposal milestone dates in the Corporation's State Wide Planning Program. The Proposal can then be agreed to by the Planning Director and the Planning Program Manager.

After reviewing the Corporation's processes and documentation for developing planning proposals, we are satisfied that the Corporation has a clear, documented, robust and rigorous approach to project planning (and indeed corporate-wide planning). The planning process outlines clear responsibilities of key personnel, and adequately covers all areas of planning that one would view as critical. These include strategic vision, long-term view, staging plan, options analysis using multiple evaluation tools, identifying and planning for future trends, documenting key learnings and experiences, and the development of a communications strategy.

3.2.4 Options analysis

As noted above, the Proposal, through the development of planning concepts, recommendations and the planning business case must establish a number of viable options and provide an evaluation of those options (including a sustainability assessment) for the capital project in question.

It is the responsibility of the Planning Manager to ensure the project team formulates all the conceptual options for improving the system to satisfy the system's requirements. As noted in the Planning Process Manual, the planning concepts must meet the project scope and objectives, and the relevant stakeholders are to be consulted during the development of the planning concepts.

Once the planning concepts have been formulated, an evaluation is undertaken to enable the most viable options to be selected for detailed planning. The evaluation process is consultative in nature and is conducted via a Value Management Study (VMS) with the Planning Manager, Planning Director, relevant Program Managers, Asset Managers and Financial Evaluation representatives in attendance. One of the aims of the VMS is to identify any constraints or obstacles that would prevent a particular concept from being implemented and as such make the concept non-viable.

Should the remaining concepts be deemed to be viable by the VMS, a sustainability assessment is applied to the remaining technically viable concepts or options.

The Corporation has adopted the Western Australian Government's definition of sustainability, which is "meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity."

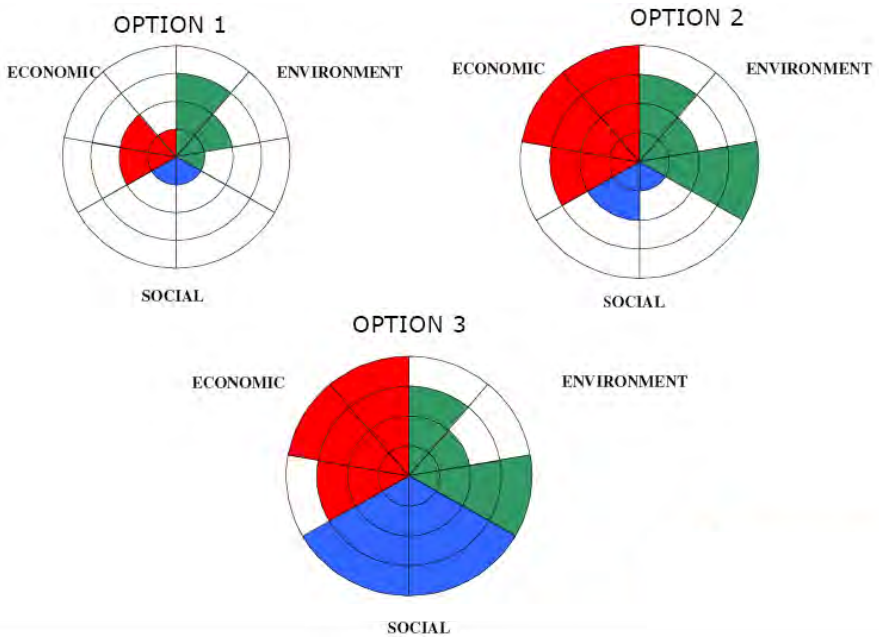
The Corporation uses sustainability planning to evaluate potential options for a capital project against:

- Environment – clearing native vegetation, energy, discharges to environment and water for the environment
- Social – heritage and values, and

- Economic – affordability and benefit.

The evaluation of each option is then documented in a table and diagram, providing a user friendly illustration of the most preferred option from a sustainability perspective. It should be noted that the Corporation requires all planning projects to undergo a sustainability assessment. An example of the final options diagram is illustrated in Figure 3.2 below.

Figure 3.2: Sustainability Options Overview



Source: Water Corporation

Once the viable options have been identified and the critical technical, social, and environmental issues to be investigated are known, a Project Manager is appointed to undertake the necessary investigative tasks required to develop a full options analysis.

Issues that are considered during the investigation include:

- Conceptual preliminary engineering for critical structures necessary to prove the viability of a concept
- Any pipeline routes that are likely to be controversial or require significant consultation
- Land matter negotiations
- Discussion with environmental stakeholders and local community groups
- Capital cost estimation for the land and assets under investigation, and

- Estimation of design and construction timetable for the assets under investigation.

Once a preferred option is identified, a Planning Evaluation Workshop is held by the Corporation with relevant stakeholders present. It is during this workshop that the respective merits of each option are considered and the reasoning for adopting the preferred option. The sustainability assessment is used again during this process to demonstrate the best sustainable option while also considering the necessary technical issues. During the workshop stakeholders have the ability to make amendments to the preferred option should they be required. Final approval of the proposed option is then gained at an Investment Review Meeting.

We are satisfied that the Corporation has developed a robust and rigorous options analysis framework which is guided by the Planning Process Manual. The roles and responsibilities of key staff are clearly outlined, as are the required evaluation processes. We note that the Corporation has imbedded sustainability assessment into the project options analysis, which is consistent with the Western Australian Government's definition of sustainability. The processes for evaluating the respective merits of the various options is also clearly outlined and documented.

We reviewed two sample planning business cases: a short planning business case for SDOOL Condition & Capital Requirements and a detailed infrastructure planning business case for the Subiaco Wastewater Treatment Plant upgrade. We found that each planning business case was prepared in accordance with the Corporation's guidelines. The short planning business case contained a detailed analysis of the relevant options and sustainability assessment. However, we noted that the Subiaco Wastewater Treatment Plant upgrade business case did not contain a formal sustainability assessment, as the "project focuses on strategic issues associated with the upgrade of an existing site and current process of ocean disposal, rather than selection between different TWW disposal options or WWTP site locations" (Subiaco Wastewater Treatment Plant – Strategic Overview, p. 31). While this appears to be reasonable, given the Corporation's stated emphasis on sustainability we would have at least expected to see a sustainability assessment of the existing treatment plant, which could then inform the Corporation's Wastewater 2060 (Water Forever) program.

3.2.5 Capital Prioritisation

The Corporation outlines all current capital projects in progress and proposed capital works in its Capital Investment Program (CIP). The CIP "must respond to Corporation wide planning, take cognisance of existing commitments, and ensure that planned expenditure (cash flow) aligns with available funding" (Water Corporation Asset Acquisition Guidelines, p. 13). The Corporation prepares CIPs for:

- The long-term (the year 6 to year 10 preliminary Capital Investment Program)
- The mid-term (the year 1 to year 5 Capital Investment Program), and
- The short-term (year 0 (i.e. current year) Capital Investment Program).

All projects included in the CIP have a documented scope, total estimated cost, required delivery date and annual cash flows. On an annual basis, the three CIPs are forwarded to the Corporation's Board and Government for approval. When programs are approved, the Board and the Government allocate a Capital Budget to enable the projects in the CIP to be funded.

Like most water authorities, the Corporation is constrained by the total amount of funding it can allocate on capital expenditure. As such, the Corporation is required to prioritise capital projects within the context of overall budgetary pressure.

The Corporation justifies and prioritises capital projects using a risk-based approach. Due to the wide variety in type and cost of assets being acquired by the Corporation, the projects in, and the size of, the CIP can vary significantly from year to year (Water Corporation Asset Acquisition Guidelines, p. 10).

The CIP is broken down into a series of Programs to facilitate delivery. A risk-based method is used to prioritise projects with each Program. This prioritisation process may draw on the Infrastructure Planning Business Case, and in particular on the risk assessment it contains.

Risk assessments facilitate decisions regarding the allocation of scarce capital resources. Once a project is completed, and the acquired assets are in operation, the risk profile at the system level changes. The new risk profile shows 'residual risk', that is, the risk remaining following the completion of the project.

Within the Corporation's CIP, programs of work are classified as either 'protected' or 'unprotected'. Protected programs have funding targets set at the program level which are reviewed annually against the programs intended benefits. Projects within these programs are then prioritised within this agreed funding target by the responsible Program Manager. The remaining infrastructure projects are prioritised for inclusion in the CIP based on a projection of the levels of business risk each project is attributable to.

The projects within 'unprotected' programs compete for funding and are prioritised for inclusion in the CIP based on a projection of the levels of business risk each project is intended to mitigate. Their prioritisation and scheduling is determined using the Capital Prioritisation System (CPS). The CPS enables the Program Manager, Manager Capital Investment and the Capital Investment Planning Committee to compare the assessed level of risk and the forecast cash flow of projects which are competing for funding in the Capital Budget.

The four main risk categories or drivers used for assessing and reporting capital investment programs are:

- Supply/demand (growth)
- Base Capital Maintenance (e.g. asset replacement, dam safety)
- Enhanced Service (e.g. customer charter, licences, external regulators), and
- Quality and Standards (Corporation or water industry determined).

These capital drivers have been developed by the Corporation to more closely align projects within the CIP with the requirements of the Economic Regulation Authority and to match the reporting requirements of the Board (please refer to Section 2.3 for further discussion on the Corporation's business drivers).

We are satisfied that the Corporation has developed a robust and rigorous capital prioritisation process which is underpinned by the Corporation's three CIPs. We note that a risk-based methodology is at the heart of the Corporation's project prioritisation process, with the four main risk categories or business drivers used for assessing and reporting capital investment programs. We also note that the capital prioritising process is supported by clear and detailed Asset Acquisition Guidelines.

3.2.6 Business Cases

During discussions with the Corporation, and subsequent documentation provided, it is the view of the Corporation that the objective of a business case should be to "ensure the correct business decision is made to address the business risk or need, to record the basis for that decision, and to determine that the timing is right to proceed with projects and to release funds". Indeed, business cases are viewed as the key decision-making tool by the Corporation's management team to assess and approve all project level capital expenditure.

To this end, the Corporation has developed Business Case Guidelines for capital investment projects. This section will review the adequacy of the Corporation's Planning Business Case structure.

The Corporation has developed guiding principles for business cases, they being:

- Trust – that the process behind the business case is robust
- KISS – keep it simple and minimise effort, ensuring that the detail provided is commensurate with the size and complexity of the project
- Teamwork – the business case requires many inputs and no one individual can take full responsibility for producing it
- Single accountability – final accountability rests with the financial delegate who signs the business case

- Output – the business case is an output of a process, not the stimulus for further review
- Competence – the people developing business cases must be appropriately trained and competent, and
- Sustainability – business cases should examine the economic, social and environmental issues.

As per the Corporation's established guidelines for Planning Business Cases, a business case is presented in four main sections, they being:

- Need
  - Current situation and consequences of deferral
  - Business risks
  - Dependent programs and projects
  - Key stakeholders
- Options
  - Planning considerations
  - Conceptual options
  - Viable options assessed
- Evaluation
  - Methodology and assumptions
  - Sustainability
  - Other impacts
  - Residual risk
  - Implementation issues
  - Operational implications
- Recommendations
  - Recommended option
  - Implementation responsibilities
  - Risk mitigation

The Corporation's planning business case template requires the responsible individual to appropriately address the need of the project and consider the consequences of deferral, associated business risks, how the projects relates to other programs and projects and who the key stakeholders are. The business case also requires discussion of the conceptual options and assessment of those options considered viable.

The evaluation section requires the viable options to be assessed against a range of criteria, including methodology and project assumptions, sustainability guidelines (discussed above), other identified impacts arising from the options, the residual risk resulting from implementing the options and any implementation issues and other considerations. Lastly, the business case requires the recommended option to be outlined, along with a discussion of the implementation responsibilities and risk mitigation strategies.

The Financial Impact Statement and the Summary Cost Estimate for the preferred option are detailed in attachments to the business case. Detailed in the attachments is also the location plans, schematic diagrams, a detailed scope list, recommendations from the VMS and PEW, a detailed business risk assessment and any other attachments that are required by the responsible individual.

It should also be noted that the Business Case Guidelines also provide advice on the level of detail required in a planning business case depending on the type of program being investigated, for example the total cost of the program or scope of the program.

We have had the opportunity to review two sample planning business cases: a short planning business case for SDOOL Condition & Capital Requirements and a more detailed infrastructure planning business case for the Subiaco Wastewater Treatment Plant. In each of the business cases we noted that the guidelines and template had been appropriately followed and filled out with in sufficient detail.

In our opinion, the Business Case Guidelines for Capital Investment Projects developed by the Corporation provide clear guidance to Planning Managers and other relevant staff when undertaken a planning business case. The key issues that one would expect to be addressed for any capital project are covered in the business case template (need, options, evaluation and recommendations).

Should the Business Case Guidelines be prudently followed, the guiding principles be adhered to and adequate training and mentoring be available to the individual undertaking the business case, we believe that a Planning Business Case developed by the Corporation is likely to address all the critical issues of a capital project and result in a recommended option that is both robust and appropriate.

3.3 Capital Delivery

The Corporation's Project Management Branch is responsible for all project delivery including definition (the project external approvals, Implementation Business Case and delivery strategies), project implementation (contract and project management) and close-out. In the following sections we provide an overview of the Corporation's approach to project implementation.

3.3.1 *Implementation Business Case*

An implementation business case is required for funding approval to proceed with project implementation. It is the 'go/no go' decision point of all asset acquisition. Once approved, budget is released for detailed design and acquisition of assets.

The Corporation has in place a formal set of guidelines for the preparation of implementation business cases. The guidelines identify accountabilities and responsibilities for the implementation business case development and set out the expected contents. The implementation business case covers definition of the project, product scope alternatives, and business risk reduction. It sets a baseline estimate of project cost and duration and must consider delivery risks, the delivery strategy, relevant stakeholder issues and the commissioning and handover strategy. A Financial Impact Statement (FIS) provides a Net Present Value (NPV) calculation for the asset to be acquired. The FIS is then used in the compilation of both long and short term assets.

The project scope must be endorsed by key internal stakeholders prior to development of the implementation business case.

Short Implementation Business Cases are prepared in instances where Program Business Cases have already been approved, where the capital spend is estimated to be less than $300,000, or where the project is deemed straight forward in nature and is less than $1.5 million. Full Implementation Business Cases are required for all other capital investments.

We reviewed two short implementation business cases, and two full implementation business cases. In general, we found that each business case was prepared in accordance with the Corporation's guidelines, and contained the key elements required in order to make an informed investment decision.

From our review of the Implementation Business Case for the Hopetoun WS: Interim Source Upgrade 07/08 ($6.5m), we note that the Pricing & Evaluation branch was unable to confirm that the preferred option was the least whole life cost. From our discussions with the Corporation we understand that while all business cases over $1.5m must be reviewed by the Pricing and Evaluation Branch, the results of these reviews will not necessarily prevent approval of a business case. In this instance, the business case was approved.

We sought additional clarification from the Corporation in relation to how it resolves issues such as this, where the information in the implementation case isn't sufficient, or where the accuracy of project estimates is less than expected. The Corporation explained that occupants of positions with the delegated authority to approve business cases must have significant experience in the business and be capable of deciding whether the information included within the Business Case is sufficient to make a decision. This decision will be influenced by the particulars of each case.

In some circumstances, such as in the case of the Hopetoun WS, the Corporation is forced to respond in a short timeframe. Hence, it is not always possible to conclude the recommended option represents the least whole of life cost to the Corporation. The Corporation indicated that the decision concluded for Hopetoun was not solely based on a financial outcome but rather, that it was the most advantageous solution for the State.

We acknowledge that the financial analysis is only one element in the decision making process and that the Corporation must rely on the experience of its delegated decision makers in making such decisions. We are satisfied that the Corporation is conscious of the importance of whole of life cost, particularly given its capital constraints. While it is important that the Corporation has in place guidelines to assist the decision making process instance, we concur that it is necessary to rely on the experience of the decision maker decisions to make best-in-time business decisions.

A full business case was completed for replacement of Perth Main Sewer Section 5 (valued at $12.8 million). The business case clearly identifies the project need and scope (including an assessment of options), milestones, risks and associated mitigating actions, the contracting strategy, the commissioning and handover plan, the human resources impact, the financial analysis, compliance with the Corporation's sustainability objectives, and the recommended option for proceeding.

To inform the contracting strategy process, the Water Corporation has developed Contracting Strategy Guidelines to assist in determining the most appropriate Project (or Bundle) Contracting Strategy. A three-stage process has been implemented around these guidelines to assist in the identification of the best delivery vehicles and contract packaging arrangements. The outputs of this process for a particular project are determined based on the project drivers, project scope and risk identification and mitigation.

We note that the three-stage process is currently under review by the Water Corporation with the intention of streamlining and simplifying the process for use on smaller, less complex projects.

3.3.2 *Procurement and Capital Delivery Strategies*

The Corporation's annual capital program approximately doubled between 2004-05 (~$300 million) and 2005-06 (~$600 million). Since that time it has steadily been increasing and is currently forecast to exceed $1.6 billion by 2013-14. In order to deliver this growing program of work, the Corporation has developed Capital Delivery Strategies such that it now bundles sections of the program for delivery through both 'traditional' and 'alternative' project delivery arrangements. Alternative project delivery agreements primarily consist of partnership and alliance contracts. The first of these alliances was established in 2005, and they currently account for approximately 50 per cent (in terms of value) of the approved capital program.

The Corporation's Capital Delivery Strategy Steering Committee is responsible for setting future strategic direction for delivery of the Corporation's Capital Program. The terms of reference for the committee are:

- To guide strategy on project delivery (i.e. setting appropriate balance of partner and traditional delivery, identifying and creating new partner bundles)
- Governance and risk management, and
- Performance review and improvement.

The Corporation's Project Delivery Committee is responsible for deciding how individual infrastructure projects are to be delivered (i.e. in-house, or through other delivery vehicles that involve partners from industry). According to the Corporation's Asset Acquisition Guidelines, consideration is given to location, asset type, complexity, technology, budget, timing and resource availability. It indicated that it adopts a risk-based approach when determining how best to deliver any given project/program of work.

The Corporation currently has in place eight program and four project alliance contracts. The alliances cover a range of program areas including (but not limited to) Metro Wastewater Treatment, Wastewater Overflow Risk Management, SCADA Integration Services, Pipelines & Pump Stations, and Large Steel Tanks. The Corporation indicated that partnerships are normally established for an initial five year period, with review periods set every few years.

The Corporation indicated that it has been satisfied with the performance of its project and program alliances. Prior to adopting these 'alternative' delivery strategies, the Corporation consistently underspent its capital budget. In contrast, the alliances have successfully delivered the capital program (in terms of time and cost), which has been the Corporation's objective in adopting these alternative delivery strategies. KPI data provided by the Corporation reflects the improvement in delivery of the projects since 2004 (as measured by the time management of completed projects); and an increase in the number of projects completed within 20 per cent of target cost by Project Practical Completion.

We consider that the use of alliance contracts should facilitate delivery of the capital program in an efficient and effective manner. The use of pain-share and gain-share mechanisms should drive efficiencies in the short term while market testing, undertaken every three to five years, will ensure that the alliance and long term partnering arrangements are still competitive.

As project and program performance data from these alliance contracts becomes more available, and as these new working practices become more embedded within the organisation, we expect that the Corporation will be in a position to further improve capital project delivery performance. This may be reflected as improvements against the Corporation's Sustainability Business Principles as measured through the Water Scores benchmarking system, including measures for time and cost. By regularly reviewing the split of work delivered by 'traditional' and 'alternative' delivery strategies, the Corporation is well placed to optimise delivery of its capital investment program.

We questioned the Corporation as to the likely impacts of the current economic climate on its capital investment program, and whether there is any scope to capitalise on the expected market downturn. It indicated that it is too early to determine the impact of the downturn although it could benefit from additional capacity within the construction market should it become available.

A review of its current program alliances indicates that five of the eight alliances are due for completion in 2008 and 2009. The Corporation indicated that its procurement and capital delivery strategies will be reviewed as the impact of the downturn becomes more apparent and that it will not enter into any new long term alliance contracts until that time. In addition, as its major program alliances have regular review periods where market testing is undertaken, it should be in a position to reap any benefits of the market downturn (should they arise) even where existing arrangements are in place.

The Corporation also has in place pre-qualified panel contracts for design consultancy services, minor works, infill sewerage, and large steel tanks. These panels are used when capital projects are delivered in-house. As pre-qualified panels reduce procurement costs we consider them an efficient means of going to market.

In addition to the above, the Corporation maintains an in-house construction branch which is responsible for delivering approximately $80 million (~5%) of the annual capital program. It indicated that the decision to retain the in-house project delivery team is a strategic one, based on maintaining core internal project delivery capabilities. The Corporation indicated that it undertakes regular benchmarking of the in-house team against other forms of project delivery. We would expect that split of work between the in-house construction branch and external delivery partners be reviewed on a regular (annual) basis to ensure that it is optimum and likely to facilitate efficient delivery of the capital investment program.

Based on our review, we consider that the procurement and delivery strategies currently adopted by the Corporation are innovative and encourage competitive delivery of the capital investment program (e.g. risk/reward payment mechanisms). As such, we believe that the Corporation will continue to improve its performance in relation to delivery of its capital investment program. As the Corporation's capital investment program grows it should be well placed to achieve best value from its supply chain.

3.3.3 Project Delivery

Upon authorisation of the Implementation Business Case, funding is allocated to the project. From this point, the Project Manager is accountable for the delivery of the project. The Project Manager's responsibility for the project continues until project close-out.

Approximately half of the capital investment program (by value) will be delivered by the Corporation's in-house resources. Projects that are managed in-house are managed in accordance with the Corporation's Project Management guideline, which are based on the principles of the Project Management Body of Knowledge (PMBoK), an internationally recognised project management standard.

The PMBoK outlines the key fundamentals of project management, and describes the key processes for initiating, planning, executing, controlling and monitoring and close projects. The PMBoK covers nine key areas (including risk management, procurement management, scope management etc) and the Corporation has adopted the standards in each of these areas.

All guidelines associated with the project delivery and handover are available on the Corporation's intranet site. In this way, all relevant documentation (procedures, forms, checklists and templates) are available to all Project Managers.

Where a project is managed by external consultants or contractors, they may use their own project management and contract procedures. In such cases, the Corporation's Project Relationship Manager acts as the key informational link between the Corporation (and its requirements) and the external Project Managers. The Corporation requires that all infrastructure asset projects meet the same key milestones requirements for capital investment as are required by projects managed by internal project managers from the Project Management Branch.

The Corporation categorises projects according to their size and complexity. These categorisations, of which there are four, are used to determine the amount of project management effort required and the skill level of the Project Manager.

The guidelines establish the minimum requirements for project documentation and associated controls. These may vary depending on the category of the project. All relevant project records are maintained within a central electronic filing location.

We reviewed the project control documentation for the Sawyers Valley 50ML tank project (~$15 million project value). The objective of our review was to examine the application of the Corporation's project management framework and associated guidelines in respect to the project.

The documentation provided by the Corporation in relation to this project included the implementation business case, the capital project budget release documentation, and change control forms.

From a review of the documentation it is evident that the business case had been subject to a robust review. Queries raised in relation to the business case were addressed prior to the release of funding. Evidence that changes to scope, budget and time were authorised and controlled via formal change control processes was provided.

Based on our review of the sample documentation, we are satisfied that the Corporation has in place robust procedures for the delivery of its capital investment projects. The Corporation's Project Management Guidelines and the PMBoK provide its Project Managers with a reference source for determining best practice project management. By establishing a standard approach to project management, and by ensuring that Project Managers have the necessary skills and experience to deliver capital investment projects, the Corporation is more likely to meet time, cost and quality objectives during the implementation phase of its capital investment program.

3.3.4 *Project Close Out*

Upon completion of each project, Project Managers are required to complete a project close out report. Project close out reports provide an assessment of the key project delivery phases (definition and implementation), and of the overall success of the project. The reviews are undertaken after commissioning of the works and within three months of the project achieving Project Practical Completion (PPC). A copy of the executive summary of each close out report is forwarded to the Corporation's Investment Planning meeting.

We reviewed the project close out report for the Sawyers Valley 50ML Tank project. The project close out report includes an overview of each change to the project, an assessment of whether performance criteria had been met, an overview of relevant issues, project highlights, the performance of key contracts, and lessons learned for project delivery improvement.

Based on our review, we are satisfied that the project close out report provides the Corporation with a mechanism by which lessons learned during the project implementation phase may be fed into future projects.

3.3.5 *Project Status Reporting*

The Corporation implements approximately 600 projects in any given year. Formal monthly reporting is undertaken on approximately 200 projects. Due to the size of the Corporation's capital investment program, projects are grouped into programs and then portfolios. Monthly performance reporting of the capital investment program is grouped at Portfolio level. Quarterly cash flow reviews are completed for all projects greater than $300,000.

The top 50 projects account for approximately 70 per cent of the Corporation's annual capital expenditure. Detailed reporting of the top 50 projects is undertaken on a monthly basis with project KPIs tracked and early warning flags used to monitor slippages (time, cost etc).

3.3.6 *Post Implementation Review*

Post Implementation Reviews (PIRs) are undertaken for selected projects as determined by the Corporation's Capital Investment Planning Committee (CIPC). In general, all infrastructure projects larger than $5 million are reviewed, as are all IT projects greater than $0.5 million.

The processes for initiating, scheduling, and producing PIRs are set out in the Corporation's PIR Guidelines. Program Managers are responsible for undertaking PIR reviews, which are undertaken at least one year (and up to two years) after the project practical completion (PPC). The reviews are performed after the defects liability period, when the works have been operated to validate actual performance data against the original planning intent.

The post implementation review includes an assessment of whether the objectives of the project have been met, and whether the outcomes address the identified business risk that gave rise to the project.

We reviewed the Post Implementation Review for the Sawyers Valley 50ML Steel Tank project, with a PPC of May 2006. It is evident from the review that feedback was sought from numerous stakeholders, both internal and external to the Corporation. The PIR included an assessment of key aspects of the project including the contracting strategy, the suitability of the design, the quality of the asset produced (i.e. in terms of expected life), performance against business case, asset management, and operability of the asset (e.g. fit for purpose). The PIR identified two key actions for the CIPC, which were assigned to specific owners.

The Corporation provided evidence that the key findings and actions were reported to the CIPC. In this way, lessons learnt from projects via the PIR process are captured and are fed back into the Corporation's planning process. Based on the documentation provided we are satisfied that the Corporation has in place a robust process for undertaking PIRs, and that key findings from such reviews are used to inform the capital investment planning process.

3.4 Key Findings

After reviewing the Corporation's processes and documentation for developing planning proposals, we are satisfied that the Corporation has a clear, documented, robust and rigorous approach to project planning. It is our view that the planning process outlines clear responsibilities of key personnel, and adequately covers all areas of planning that one would view as critical.

We are satisfied that the Corporation has developed a robust and rigorous capital prioritisation process which is underpinned by the Corporation's three CIPs. We note that a risk-based methodology is at the heart of the Corporation's project prioritisation process, with the four main risk categories or business drivers used for assessing and reporting capital investment programs. We note that the capital prioritising process is supported by clear and detailed Asset Acquisition Guidelines.

In our opinion, the Business Case Guidelines for Capital Investment Projects developed by the Corporation provide clear guidance to Planning Managers and other relevant staff when undertaken a planning business case. Should the Business Case Guidelines be prudently followed, the guiding principles be adhered to and adequate training and mentoring be available to the individual undertaking the business case, we believe that a Planning Business Case developed by the Corporation is likely to result in a recommended option that is both robust and appropriate.

Based on our review, we consider that the procurement and delivery strategies currently adopted by the Corporation are innovative and encourage competitive delivery of the capital investment program.

We consider that the use of alliance contracts will facilitate delivery of the capital program in an efficient and effective manner, subject to pain-share and gain-share arrangements, and market testing, undertaken every three to five years, to ensure that the alliance and long term partnering arrangements are still competitive.

By regularly reviewing the split of work delivered by 'traditional' and 'alternative' delivery strategies, the Corporation is well placed to optimise delivery of its capital investment program.

Based on our review of sample documentation, we are satisfied that the Corporation has in place robust procedures for the delivery of its capital investment projects.

The Corporation's project close out and post implementation reviews provide a mechanism by which lessons learned during project development implementation phases may be used to inform the capital investment planning process.

Based on the above, we believe that the Corporation will be in a position to continue to improve its performance in relation to delivery of its capital investment program over the coming regulatory period. We expect that this will be reflected in an improvement of KPI scores which measure the time management of completed projects and the number of projects completed within 20 per cent of target cost by Project Practical Completion.

4 Operations Processes

This section provides an overview of operations by Water Corporation. It includes a review of its operation planning and delivery processes and cost drivers, and discusses the scope for operating efficiency gains.

During our review of the operational planning and delivery processes of Water Corporation we sought to gain an understanding of the adequacy, and robustness of its processes. Provided that the Water Corporation's operational processes are appropriate and robust, we can gain assurance over the appropriateness of its proposed operating expenditure forecasts.

4.1 Operational Planning

This section of the report provides an overview of the key elements of the Corporation's operational planning processes. This includes its approach to budgeting, and operational controls.

4.1.1 Approach to Budgeting

The Corporation has in place guidelines to assist with the preparation of budget submissions. The guidelines:

- Ensure a standardised approach to budget formulation is adopted across the organisation, applying uniform decisions, methodologies and procedures
- Provide a consistent set of assumptions, and
- Indicate the minimum information required from divisions to support submissions.

These guidelines are also used to develop the Corporations Strategic Development Plan (SDP), which sets the total annual operating budgets for each five year price path.

SDP budgets are determined by essentially adopting a budget-on-budget approach, where budgets for the next year are based on 'base' budget costs from the previous year (after removal of non-recurring items that received temporary funding). Adjustments are then made for growth, inflation, increasing Levels of Service (LoS) and efficiency targets.

The adjustment for 'general growth' is an estimate of the increase in operating expenditure that will occur over the five year price path as a result of new capital schemes, growth, and new corporate initiatives. The adjustment for changing LoS is an estimate of the increases in operating expenditure that will result from meeting new regulatory requirements and standards.

Once approved by Department of Finance and Treasury, the SDP budgets set the five year annual operating budget. During the price path, the SDP is updated on an annual basis, and SDP budgets may be increased due to abnormal factors, such as greater than forecast inflationary pressures or externally imposed directives (e.g. Ministerial Directives) which have a material impact on operating expenditure.

In any given year, the Corporation's annual operating budget is set to ensure that it does not exceed the budget set by the SDP (after adjustments for abnormalities). In setting the annual operating budget, the Corporation rolls forward the previous year's operating expenditure (base operating expenditure) and makes adjustments for:

- Inflation- The Corporation uses an internally calculated Operating Cost Index (OCI);
- Growth – measured as the increase in property numbers, currently 2.8% per annum;
- Levels of Service items – this relates to improvements that increase the LoS. These may be externally imposed (by regulators etc.), cost/benefit justified, or abnormal items (asset write off etc)
- Operating expenditure arising from new capital schemes - known as Financial Impact Statement (FIS) operating expenditure;
- Approved increases in base expenditure – known as Changes to Base (CTB).
- New corporate initiatives – including corporate strategic programs.
- Efficiency targets – in rolling forward the previous year's budget, a 2 per cent efficiency target is applied at the macro level.

The Corporation indicated that as expenditure arising from FIS and CTB is viewed as committed, it has traditionally adjusted/prioritised the funding of initiatives to ensure the SDP operating expenditure target is not exceeded.

The Corporation has in place a clearly defined process by which requests for funding are submitted, assessed and authorised. The process applies to all types of funding requests, including new/ongoing corporate initiatives, process improvements, regulatory changes, CTB, LoS, growth, and other ('miscellaneous').

The Corporation's Macro Budget Guidelines require budget owners seeking additional funding due to growth to apply for specific growth allowances as part of their budget submissions. The guidelines require all requests to be clearly substantiated through reference to drivers, and to demonstrate a strong link between the identified drivers and the associated cost elements.

Any growth in costs that are offset by either an increase in revenue, or a reduction in costs elsewhere, will receive funding approval providing that the offsetting items have also been incorporated into budgets. These funding requests are discussed in more detail in the following paragraphs.

4.1.2 *New operating budget initiatives*

Where a Division within the Corporation seeks funding for new initiatives in excess of $100,000, it must submit an 'Action brief'. Each Action Brief is required to contain adequate justification for the proposed expenditure item in the form of a summarised business case. It must also clearly identify any resourcing impacts, indicate the driver (level of service, growth, regulatory or process improvement) and indicate if the item addresses a risk evident in the risk profile.

For new initiatives less than this threshold, the Division is required to absorb the expenditure into existing base costs by reprioritising existing activities.

Where an approved Action Brief contains ongoing funding spanning all or part of the five-year period of the current budget cycle, the Action Brief is required to be resubmitted each year the budget is required. This re-evaluation process ensures that the indicative funding previously allocated is still required, or at all.

As part of our report we reviewed the Action Briefs for ACA Gap Treatment and Wungong Thinning. While we note that the Action Briefs are based on a summarised business case, we believe that the level of detail and information provided in the Action Briefs can be improved. The information contained in the Action Briefs was high-level and lacked supporting evidence. The Wungong Thinning Action Brief referred to an associated business case when outlining the project deliverables and benefits. We have not been provided with this business case.

The Corporation uses a risk based approach when assessing additional funding requests. Expenditure which reduces the Corporation's corporate or strategic risk profile is prioritised over that expenditure that is likely to have little or no impact on reducing the risk profile. We understand that the risk assessment is reviewed by the Corporation's risk manager to ensure that the assessment is fair, and an in keeping with the Corporation's Risk Framework (for further discussion on the Corporation's risk management approach, please refer to Section 2.4).

Funding requests are scored against four pre-defined weighted criteria, taking into account the risk rating (35 per cent), whether the funding is mandatory (25 per cent), whether it contributes to the achievement of the Corporation's strategic objectives (20 per cent), and whether it is cost-benefit justified (20 per cent). Other considerations such as the impact of 'doing nothing' are also considered.

Action Brief's must be reviewed by the relevant Divisional Finance Manager and Business Planner, then approved by the relevant Process Manager and be endorsed by the Process Owner. Process owners are responsible for reviewing and prioritising funding requests prior to submitting them to the Corporation's Evaluation Committee, which is ultimately responsible for authorising these requests. The Committee is comprised of senior business managers from across the business.

In the 2009-10 budget review (conducted in 2008-09), funding requests totalling $70 million (over the period 2009-10 to 2012-13) were submitted to the Evaluation Committee (170 requests). However, additional funding of only $29 million was approved for inclusion in the budget.

We understand that the standard of funding requests often varies significantly from Division to Division. This might indicate that the process outlined in the Macro Process Guidelines is not working effectively in all areas. The Corporation indicated that the differences in quality between divisions was due primarily to the fact that some Divisional managers undertook an internal review of funding requests before submitting them to the Evaluation Committee, while others did not.

Based on our review of the process for assessing and authorising increases to base operating expenditure, we are satisfied that the process is both robust, and that it aligns with the Corporation's Risk Framework and its overall corporate and strategic objectives. We consider that there may be some scope for improving the efficiency of the process by ensuring that all requests are internally reviewed by Divisional managers prior to being submitted. This should reduce the number of unsubstantiated requests for funding, and will enable the Evaluation Committee to better focus its effort on initiatives that will benefit the Corporation.

4.1.3 Review of the operating 'base'

As noted above, the Corporation largely adopts a budget-on-budget approach for setting operational budgets, with operating budgets for the coming year based on the previous year's 'base' operating budget with adjustments. Currently, the base operating expenditure accounts for approximately 85 per cent of the Corporation's total operating budget.

For an organisation as large and complex as Water Corporation, we consider that a formal, detailed bottom-up review of the Corporation's expenditure on a periodic basis is necessary to ensure the relevance and efficiency of existing funding items.

While the Corporation does not currently undertake detailed bottom up reviews of its operating expenditure, it has indicated that it does undertake a close review of a significant portion of its expenditure items on an annual basis. This includes:

- Labour costs (which account for 37 per cent of direct operating costs) must be justified to an individual employee level, with Divisions required to submit employee information with budget submissions. Additions to the employee base must be justified through impacts arising from the capital program (via the Financial Impact Statements) or through Action Briefs for new operating expenditure.
- Energy (9 per cent of direct operating costs) supply contracts are put out to tender on a regular basis, with budget energy volumes reset each year to align with the adopted water production strategy.
- Chemical costs (4 per cent of direct operating costs) are also aligned with the water production strategy, with budgets annually reviewed to reflect expected usage.
- Alliance costs (12 per cent of direct operating costs) are governed by the alliance maintenance contracts, which are put out to tender on a regular basis. We note that the Corporation regularly reviews the market and the current supplier/contractor's performance.
- Information Technology support services contracts (2 per cent of direct operating costs) are outsourced. The Corporation requires these contracts to be put to tender to ensure optimal market price and quality of service.

In addition to that above, we also acknowledge that by applying 0.5 per cent efficiency targets to the annual operating budget of each business area, business managers are continuously encouraged to review expenditure and identify efficiency savings.

We understand that the Corporation is embarking on a pilot program of Zero-Based Budgeting which will require an examination of base budget costs to ensure they reflect the efficient cost of undertaking its 'business as usual' activities. Should the pilot prove successful, the Corporation has indicated that it will to seek to cycle through all business units over a five-year period to ensure that it is constantly reassessing the level of base budget expenditure. We believe that the Corporation's proposed rolling five-year program is both adequate and appropriate, as we recognise that a properly implemented and detailed Zero-Based Budgeting review is a time-consuming and resource-intensive process.

4.1.4 *Operational Controls*

The Corporation reports on actual operating expenditure performance on a monthly basis via the Corporation's Business Performance Reporting (BPR) System. The BPR financial performance reports contain both budget targets and forecast projections for the current year.

Forecasts for the current financial year are prepared on a quarterly basis to assess projected performance against budget targets. In the event that a forecast signals that operating expenditure targets are at risk, action is taken to consider possible reprioritisation, curtailment, or deferral of some activities in order to manage performance back to budget target levels.

As part of the quarterly forecast process, divisional finance teams analyse budget variations and include appropriate commentary in their forecast submissions. Analysis and commentary of corporate results is then prepared for presentation to General Management. Accountability for achieving division budget targets rests with the respective General Manager.

Monthly BPR performance reports track year-to-date actual financial results against forecast targets. Divisional finance teams are responsible for preparing and releasing BPR financial reports for their division, inclusive of commentary that adequately explains variations. These reports are reviewed each month by the Division's Lead Team, and the corporate report is reviewed at the monthly Executive meeting.

4.2 *Operational Delivery*

The following section will provide a brief overview of the key elements of the Corporation's current operational delivery mechanisms, including use of alliance contracting and traditional outsourcing contracts.

The Corporation has stated that it applies value for money principles in its procurement activities, be it operating or capital in nature. In addition, we note that Section 30 of the *Water Corporation Act 1995* requires the Corporation's processes and procedures to be consistent with sound commercial practice. This requirement is inscribed in the Corporation's Procurement of Goods and Services Policy document to which all Corporation personnel are expected to adhere to.

To support this objective, the Corporation has established standards, processes and procedures including routine benchmarking, the ongoing development of systems, training and development of personnel involved in the procurement of goods and services and the management of ensuing contracts.

To obtain value for money and maintain competition between suppliers, the Corporation seeks quotations (verbal if less than $10,000 and in writing if more than $10,000) or tenders (anything greater than $100,000) from the market. As noted above, the Corporation makes use of strategic alliances (mainly for maintenance purposes) which are put out to tender on a regular basis. We note that the Corporation regularly reviews the market and the current supplier/contractor's performance. Alliance maintenance contracts are worth approximately $74 million per annum, or about 12 per cent of direct operating costs.

In addition to alliance contracts, the Corporation also outsources a number of other operating activities, including:

- IT Support Services Contracts
- External Consultants across a variety of projects
- Management of Vehicle Fleet, and
- A range of other services, including legal support, workers compensation management, freight, and depot/workshop maintenance.

4.3 Operational Efficiency

The following section will provide an overview of the key elements of the Corporation's current operational efficiency target. The section will also discuss and review potential future operational efficiency targets for the Corporation.

4.3.1 *Current operating efficiency target*

The Corporation currently operates with an annual real operating efficiency target per connection of 1.88 per cent. The efficiency target is delivered via:

- A general efficiency target of 0.5 per cent which is applied to all Divisional and Business Unit budgets on grounds of continuous operating improvement, and
- The remaining 1.5 per cent or so is delivered through specific business improvement initiatives and, to the extent that this is not achievable, a reduction in the funding available for new initiatives.

The Corporation indicated that it has successfully achieved a real annual operating efficiency per connection in excess of the required 1.88 per cent over the current pricing period. These efficiency gains were realised from the following sources:

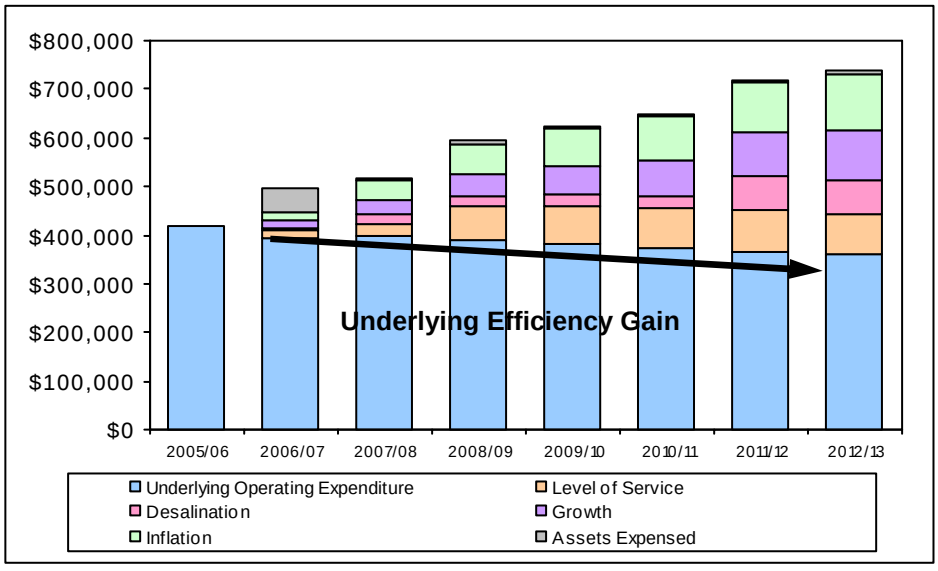
- Economies of scale – 1.20 per cent
- Cuts to non-LoS requirements – 0.25 per cent
- General efficiency requirement – 0.50 per cent, and
- One-off and continuous improvement projects – 0.25 per cent

The Corporation indicated that it achieved actual efficiency savings of approximately 2.20 per cent per annum, which equates to approximately $12 million per annum. However, in the period since our interviews with the Corporation, it has since stated that a substantial increase in negotiated salary and wage claims over the nine months ending November 2008 has resulted in a higher than anticipated total labour expense. Given that almost half of this claim is attributable to the 2007-08 financial year, the Corporation believes that this adjustment will result in a three-year average annual efficiency of approximately 2 per cent.

The Corporation indicated that meeting the real 1.88 per cent annual efficiency target while simultaneously ensuring that the target did not adversely impact the standard and quality of core business services provided has been a significant challenge. It has stated that as a result of meeting the efficiency target, there have been some reductions to non-LoS corporate initiatives. While we accept that meeting the target may have posed a challenge to the Corporation, we consider its budgeting and planning processes sufficiently robust to ensure that efficiencies savings are targeted at the most appropriate areas.

The following figure illustrates how the Corporation seeks to calculate the efficiency target, using the 2005-06 actual result as a baseline example to illustrate the impact of the efficiency target over time.

Figure 4.1: Water Corporation's Efficiency Target ($'000s)



Source: Water Corporation

The real 1.88 per cent annual operating efficiency target is applied to the Corporation's underlying operating expenditure (i.e. the Corporation's base operating expenditure). The Level of Service (LoS) expenditure items (those items that result in an improved level of service or are externally imposed) are then added to the new operating base. Growth expenditure is only applied to Business Units that have a direct interface with the operational requirements of supplying water to customers. Growth is not typically applied to administrative Business Units. The impacts of inflation and assets expensed are then also added to the new operating base. It should be noted that the above figure also includes the impact of the new desalination plant that is scheduled to be commissioned by 2011.

4.3.2 Recommended efficiency target for Water Corporation

The Corporation has acknowledged that operating efficiency gains can continue to be achieved in the future pricing period. Indeed, the Corporation's Board have recently met to consider the formal adoption of an efficiency target in the Corporation's financial forecasts.

After deliberating over setting a target of nominal 1.5 per cent or 2 per cent, the Board has decided to continue to endeavour to meet the current nominal 2 per cent efficiency target (that is, the current annual real 1.88 per cent target per connection). This position by the Board was largely based on recognition of the Corporation's ability to meet the target in the past, and of the current financial concerns in local and national economies.

As noted earlier in this report, the Corporation's activities have a significant financial impact on the State Government financial position. With the State Government's financial forecasts under considerable pressure, the Board has indicated that the Corporation needs to play its part in assisting with the current concerns.

While the Corporation still believes that continuing the existing efficiency target could potentially result in the complete cut in all non-LoS corporate initiatives and some potentially unsustainable short-term cost cutting measures (for example cuts to maintenance programs), the Corporation recognised that reducing the efficiency target to 1.5 per cent would be contrary to the broader State-wide objectives.

In meeting the future real annual operating efficiency target per connection of 1.88 per cent, the Corporation has stated that it is difficult to say exactly where the additional efficiencies will be delivered, however it is likely they will be sourced from a combination of continuous improvement initiatives, reductions to corporate initiatives and non-mandatory expenditure or the deferral of some projects. In our benchmarking review we also highlighted the potential for consolidating some FTE's to bring the Corporation into line with other similar agencies.

The Corporation has stated that it will continue to seek future operating efficiency gains by:

- Capitalising on its size and economies of scale. The extent of future efficiencies is dependent on the location of the growth, the level of existing spare capacity and the relative cost of future alternatives available for meeting the growth requirement.
- General 0.5 per cent efficiency will continue to apply to annual budgets for individual business units.
- One-off and/or continuous improvement opportunities. The Corporation has several approaches which seek to identifying cost reduction opportunities including a Continuous Improvement approach and a trial of selective Zero-Based Budgeting.

As part of the Corporation's Continuous Improvement approach, the Corporation is implementing an Enterprise Lean Six Sigma methodology which is considered a proven methodology that targets waste reduction and process variation across the business. It focuses on identifying core business process issues and providing a structured framework to address them.

In the past the Corporation has been able to partly achieve its real 1.88 per cent target by reducing the funding available for corporate initiatives. However, we note that due to past reductions to these programs continuing to seek reductions from corporate initiatives will result in diminishing returns.

Based on our review, we are confident that the Corporation can continue to achieve the current real operating efficiency target of 1.88 per cent target, noting that the Corporation has itself stated that it has successfully achieved the target in the past. The Corporation's intention to continue seeking general efficiency savings from all its Divisional and Business Units is in line with good practice and will assist the Corporation in undertaking continuous operating improvements.

4.4 Key Findings

We are satisfied that the Corporation has developed a series of robust and rigorous operational planning and delivery processes that align appropriately with the Corporation's Risk Framework and its overall corporate and strategic objectives. We are also satisfied with the Corporation's process for assessing and authorising increases to base operating expenditure, noting the Macro Budget Guidelines that the Corporation has developed to inform the process.

We believe that the Corporation's practice of reprioritising new operating expenditure items under a $100,000 threshold to be good practice.

While we note that the Action Briefs are based on a summarised business case, we recommend that the Corporation should seek to improve the level of information and detail provided by process owners in the Action Briefs to better inform the macro budget process.

We noted during our interviews with the Corporation that the standard of operating funding requests varied significantly from Division to Division. We believe there is significant scope for improvement in the quality of funding requests by requiring Divisions to undertake a formal review of Divisional requests before submission to the Evaluation Committee. This would improve the overall quality of requests that the Evaluation Committee views, whilst continuing to foster a culture of continuous improvement.

We are satisfied to note that the Corporation is embarking on a pilot program of Zero-Based Budgeting which will require an examination of base budget costs to ensure they reflect the efficient cost of undertaking its 'business as usual' activities. We believe that the Corporation's proposed rolling five-year program is both adequate and appropriate, as we note that a properly implemented and detailed Zero-Based Budgeting review is a time-consuming and resource-intensive process.

We recommend the Corporation continue to endeavour to achieve the current real operating efficiency target per connection of 1.88 per cent. We are confident that the Corporation can continue to achieve the target based, noting that the Corporation has itself stated that it has successfully achieved the target in the past.

We recognise the Corporation's aim of continuing to seek a general efficiency requirement from all Divisional and Business Units is in line with good practice. We believe that this will assist the Corporation in undertaking continuous operating improvements, and we encourage the Corporation to continue this policy.

5 Historical and Proposed Expenditure

5.1 Overview

The following section provides a review of the historical and proposed expenditure of Water Corporation, and investigates the reasons for any substantial differences between forecast and actual expenditure.

5.2 Capital Projects

5.2.1 *Overview*

Western Australia and metropolitan Perth is currently one of the fastest developing regions in Australia, resulting in significant demand to provide and maintain new infrastructure assets at a rate that matches the demands of a growing revenue base. As such, the Corporation has outlined a capital works program that can facilitate that expansion and meet demand.

5.2.2 *Historical expenditure*

The Corporation's annual capital works program has grown significantly since 2004-05, reflecting in part the rapid growth of state of Western Australia has experienced in the past five years.

In 2004-05, the Corporation's capital works program totalled $356.3 million (actual), and in 2008-09 was forecast to exceed $1 billion for the first time, underlining the scale of water and waste water infrastructure currently being undertaken in Western Australia.

The following table shows the capital expenditure for the period 2005-06 to 2007-08 identified in the SDP of 2004-05, the capital expenditure proposed by the Corporation during the last regulatory review, and the capital expenditure recommended by the ERA.

The capital expenditure proposed by the Corporation at the 2005 Price Review was based on the 2004-05 SDP, adjusted for commercial (non-regulated) projects ($1 million per annum.) and capitalised support costs ($16 million per annum). Capitalised support costs are operating expenses which are transferred to the capital program on an annual basis to reflect support services provided by operations staff to capital projects.

Table 5.1: Capital Expenditure program for Water Corporation ($M nominal)

	2005-06	2006-07	2007-08
2004/05 SDP	711.8	439.0	569.1
Non-regulated projects	+1.0	+1.0	+1.0
Capitalised support costs	+16.0	+16.0	+16.0
Water Corporation's Proposed Capex (2005 Price Review)	728.8	456.0	586.1
Capex recommended by ERA	755.6	491.3	618.5

Source: Water Corporation, Economic Regulation Authority

In 2005, the Authority found that the Corporations forecasts of capital costs were appropriate and the only difference between the proposed expenditure and that recommended by the Authority is the net impact between assets given to the Corporation by land developers (handover assets) and proceeds from the sale of assets during the year.

However, the Corporation, in consultation with the Western Australian Department of Treasury and Finance (DTF) , reviews and develops operating and capital budgets on an annual basis using the previous year's SDP as a base. For the purposes of this report, these budgets are referred to Final Regulated Budgets.

Using the 2004-05 SDP as a base, the following table (Table 5.2) reconciles the Corporation's capital budget as predicted by the 2004-05 SDP with the Final Regulated Budget developed in conjunction with, and approved by, DTF. As can be seen, a number of changes to the annual capital budgets have been made subsequent to development of the SDP. The changes were the result of budget adjustments and project related budgets, and each change was approved by the Department of Treasury and Finance. These changes are summarised in the following table.

As noted above, we understand that DTF was consulted in relation to each of the budget adjustments to the 2004-05 SDP figures, and hence we have not reviewed these items in detail. However, we note that significant adjustments were made as a result of cost escalation and project related adjustments. These adjustments are outlined in Table 5.2 below.

Table 5.2: Adjustments to SDP capex budgets ($M nominal)

	2005-06	2006-07	2007-08
2004/05 SDP	**711.8**	**439.0**	**569.1**
Budget Adjustments	-		
2004/05 carry over	-	58.0	9.7
2005/06 carry over	-	26.1	5.3
Cost Escalation	-	24.0	124.6
Funding Advance	-	30.0	-
State Budget Reduction	-	-	(7.1)
Project Related Adjustments			
Additional Projects	3.0	28.7	136.1
Changes to Existing Projects	(43.6)	(19.3)	51.6
Deleted Projects	(14.0)	(15.0)	(102.7)
Final Regulated Budget	**657.2**	**571.5**	**786.6**

Source: Water Corporation

The cost escalation adjustments made to the SDP budgets were based on a reconciliation of the Water Corporation's escalation estimates with actual estimation data. The project related adjustments summarised in Table 5.2 above include additional expenditure for eleven projects not previously included within the SDP figures, changes to the timing of four existing projects and two projects that were deleted from the capital program. A reconciliation of these project related adjustments, with accompanying comments outlining the cause for the adjustments, is provided below in Table 5.3.

Table 5.3: Project related adjustments ($M nominal)

Description	2005-06	2006-07	2007-08	Comment
Additional Projects				
Woodman Point Odour Control Stage 1	-	2.8	45.9	Driven by change in operating licence condition at Woodman Point WWTP.
Coral Bay Water Supply	3.0	4.4	0.8	Driven by Government's commitment to the Ningallo Coastal Region.
Hopetoun Wastewater	-	2.9	10.1	Improvements required following the transfer of licence from the Shire, and growth associated with BHP's Ravensthorpe Nickel operations.
Nilgen Water Supply	-	0.5	1.2	Improvements required following the transfer of licence from private operator.
Gnangara Mound Replenishment Trail	-	3.0	11.0	Driven by climate change, involves using recycled water after reverse osmosis treatment to deliver public water supply benefits.

Description	2005-06	2006-07	2007-08	Comment
Additional Projects				
Infill Sewerage	-	10.0	20.0	Required to accelerate completion of infill sewerage program.
Southern Seawater Desalination Scheme	-	-	19.9	Driven by Government's announcement that the next major water source will be a second seawater desalination plant.
Wiluna Wastewater	-	3.7	-	Improvements required following the transfer of licence from the Shire.
Beenyup WWTP amplification	-	-	15.2	Driven by delays to Alkimos WWTP and strong development in Perth's north-west corridor.
Integration assets planning	-	1.4	6.6	Driven by climate change and the requirement for the effective operational integration of additional assets into the IWSS
Boddington Water and Wastewater	-	-	5.4	Water and wastewater infrastructure related to the reopening and expansion of Boddington gold mine.
Sub-total	**3.0**	**28.7**	**136.1**	
Changes to existing projects				
Alkimos Wastewater Scheme	-13.9	-31.0	-29.6	Driven by WWTP site changes and delays with approvals.
East Rockingham Wastewater Scheme	-3.9	-14.1	37.2	Driven by changes associated with proposed purchase of odour buffer.
Perth Seawater Deslaination Plant	-25.8	25.8	-	Driven by changes due to the re-profiling of project contingencies.
Mandurah Wastewater Treatement Plants	-	-	44.0	Driven by changes due to delivery efficiencies realised through alliance contracting.
Sub-total	**-43.6**	**-19.3**	**51.6**	
Deleted projects				
South West Yarragadee	-	-	-102.7	Driven by Government decision to proceed with southern seawater desalination plant as the next IWSS
Harvey Water Trade	-14.0	-15.0	-	Driven by change in accounting treatment of Harvey Water Trade funding.
Sub-total	**-14.0**	**-15.0**	**-102.7**	
Total project related adjustments	**-54.6**	**-5.6**	**85.0**	

Source: Water Corporation

The following table shows the variation between the final regulated budget and the Corporation's actual expenditure for the period 2005-06 to 2007-08.

Table 5.4: Capital Expenditure - Budget versus Actual ($M nominal)

	2005-06	2006-07	2007-08	Total
Final Regulated Budget	657.2	571.5	786.6	2,015.3
Actual Regulated Expenditure	613.6	633.5	763.5	2,010.6
Variance	(43.6)	62	(23.1)	-4.7
Variance (%)	-6.6%	10.8%	-2.9%	-0.2%

Source: Water Corporation

As shown in the Table 5.4 above, although the Water Corporation underspent its budget in 2005-06 and 2007-08 and exceeded its budget in 2006-07, the overall variance in the period 2005-06 to 2007-08 is not substantial ($4.7 million).

The Corporation has identified the key underlying causes for the under and over expenditure in each of the three years.

The Corporation has indicated that the under-expenditure in 2005-06 was primarily associated with the lack of sufficient resources to deliver its growing capital investment program, both internally and within the water industry. This is not an unexpected result, particularly given the significant jump in the Corporation's capital program between 2004-05 and 2005-06.

In order to address its shortage of resources, the Corporation implemented its Capital Delivery Strategy, which had the objective of facilitating delivery of its significantly increased capital program. The first of the capital program alliances was established in 2005 and the Corporation has indicated that the over-expenditure in the following year (2006-07) was partly due to the accelerated delivery of projects resulting from implementation of the Capital Delivery Strategy, and presumably also the completion of work deferred into this year from 2005-06.

The Corporation also identified the significant increase in the number of and requirements for external approvals as an underlying cause for the under-expenditure in 2005-06. We would expect that such delays will be minimised in the future, as the Corporation adapts its processes and systems to address these new requirements.

The major contributions (representing over 90 per cent of the total variation) to the under-expenditure of $43.6 million in 2005-06 are broken out as follows:

- path infrastructure for the Perth Seawater Desalination Project ($11.3 million);
- delayed approval by BHP to fund the Port Hedland pipeline, De Grey Borefield Expansion and Yule Borefield Expansion ($8.7 million);

- delays in design and the availability of external resources to deliver the Infill Sewerage program ($4.7 million);
- delays in the availability of external resources to deliver the Overflow Risk Management Program ($4.7 million);
- late commencement of the Kalgoorlie Additional Storage ($4.2 million);
- delayed Government approval for Coral Bay water supply upgrades ($2.8 million);
- design resource constraints delayed the 1996 Australian Drinking Water Guidelines program ($2.0 million); and
- external and internal resource constraints delayed the Dam Safety Program ($1.5 million).

The actual expenditure in 2006-07 exceeded the approved regulated budget by $62 million. The Corporation identified the following four key factors contributing to the over-expenditure:

- Accelerated project delivery through successful implementation of the Capital Delivery Strategy - this accounted for $38.4 million of the over expenditure. Major contributors to this figure included:
  - Kalgoorlie Additional Storage ($14.9 million);
  - Maylands Main Sewer Refurbishment ($4.7 million);
  - Halls Head WWTP Upgrade (additional $4.5 million)
  - Gordon Road WWTP (additional $3.4 million)
  - Alkimos WWTP Ocean Outfall Design Phase ($3.2 million);
  - Kwinana WWTP Upgrade ($2.8 million);
  - Como Main Sewer Relining ($2.8 million);
  - Beenyup WWTP Amplification ($2.3 million)
- Pre-payment of materials to ensure continuity of supply, and project acceleration to secure specialist equipment - money spent on pre-payment of materials accounted for an additional $14.4 million of capital expenditure. This figure includes a $10.2 million pre-payment made by the Alkimos Wastewater Treatment Alliance to secure the tunnel boring machine required to complete the Quinns Main Sewer. Bringing forward this expenditure was deemed necessary to secure specialist equipment that is in high demand.
- Fast-tracking several risk mitigating projects in response to climate change related incidents in South Western Australia - climate change related projects accounted for increased capital expenditure of $1.0 million, including UV Disinfection Units ($0.6 million), Australind ($0.3 million) and Contingency Water Treatment Plants ($0.1 million).
- A change in accounting treatment of some Perth Seawater Desalination Project operating costs to meet reporting standards. The change led to an increased capital expenditure of $2.3 million.

In 2007-08, the actual regulated expenditure was $23.1 million below budget. The Corporation attributed this variance to the decision to defer the purchase of the East Rockingham WWTP odour buffer land ($21.9 million) whilst environmental issues were resolved, resulting in a significant reduction in the overall expenditure.

Based on the high-level analysis of the Corporation's historical capital expenditure and the Corporation's actual performance against budgeted capital expenditure, we have not identified any inappropriate historical capital expenditure.

5.2.3 *Proposed expenditure*

Capital expenditure by the Water Corporation is forecast to increase significantly during the next five years. As noted above, the capital works program for 2008-09 is forecast to exceed $1 billion for the first time. The following table outlines the Corporation's expected capital budget for the years 2008-09 to 2012-13.

Due to the rapid growth experienced in metropolitan Perth in recent years, the Corporation will spend $650 million in 2008-09 on works designed to ensure that rapidly developing areas in Perth have the water and waste water infrastructure essential for development. Of this figure, $164.2 million will be spent on the development of the Southern Seawater Desalination Plant near Binningup to ensure the project can be commissioned by 2011. This plant will also closely align with the Corporation's longer-term strategy of reducing total extraction from the Gnangara groundwater system which is currently under significant stress.

Also under the $650 million, $68.6 million will be spent on the development of a new major wastewater treatment plant at Alkimos. This project will provide a wastewater treatment and disposal plant for the full development of the Alkimos satellite city, which is designed to cater for more than 100,000 people.

An additional $60 million will also be spent on upgrading Perth's sludge treatment facilities and odour control works.

We note that the Corporation has included a separate item for input cost escalation. A brief analysis indicates that this item represents between 11.9 percent and 13.5 percent of the total capital budget. It is presumed that this item is essentially an escalation factor representing the impact of previous increases in basic items due to the booming economy. However, given the recent downturn in the economy we would expect that the assumptions made when calculating this escalation factor will have significantly changed. As such we would expect this factor to be much lower than predicted.

Table 5.5: Water Corporation's recommended Capital Budget 2008-09 to 2012-13 ($M nominal)

Program	2008-09	2009-10	2010-11	2011-12	2012-13
Regulated Program: 2007-08 State Budget Position	**682.9**	**659.0**	**565.4**	**716.6**	**775.0**
Additional Funding Review Decisions					
Southern Seawater Desalination Plant	164.2 13.5%	488.6 11.9%	280.5 12.3%	1.8 13.5%	-
Input Cost Escalation	81.5	70.2	61.9	85.1	-
Alkimos WWTP Alliance Timing Change	68.6	7.8	20.5	-	-
Woodman Point Odour Control	28.9	8.1	-	-	-
Hopetoun WWTP	6.0	-	-	-	-
Beenyup WWTP Timing Change	46.5	-	-22.1	-24.4	-
Collie River Diversion	-10.0	-5.0	-	-	-
Sunset Coast Alliance Timing Change	2.2	-9.7	-36.5	-	-
Sub Total	**1070.8**	**1219.0**	**869.7**	**779.1**	**775.0**
Additional Funding – ERC Decisions					
Prevention of Falls	9.0	9.0	9.0	9.0	-
Infill Sewerage	10.6	5.6	5.7	-	-
Boddington Water & Wastewater	5.4	14.4	-	-	-
Country Water Restrictions Reversal	2.6	2.6	2.6	2.6	-
Sub Total	**1098.4**	**1250.5**	**887.0**	**790.7**	**775.0**
Population of out-years	-	-	-	-	308.3
Regulated Program: 2008-09 State Budget Position	**1098.4**	**1250.5**	**887.0**	**790.7**	**1083.3**

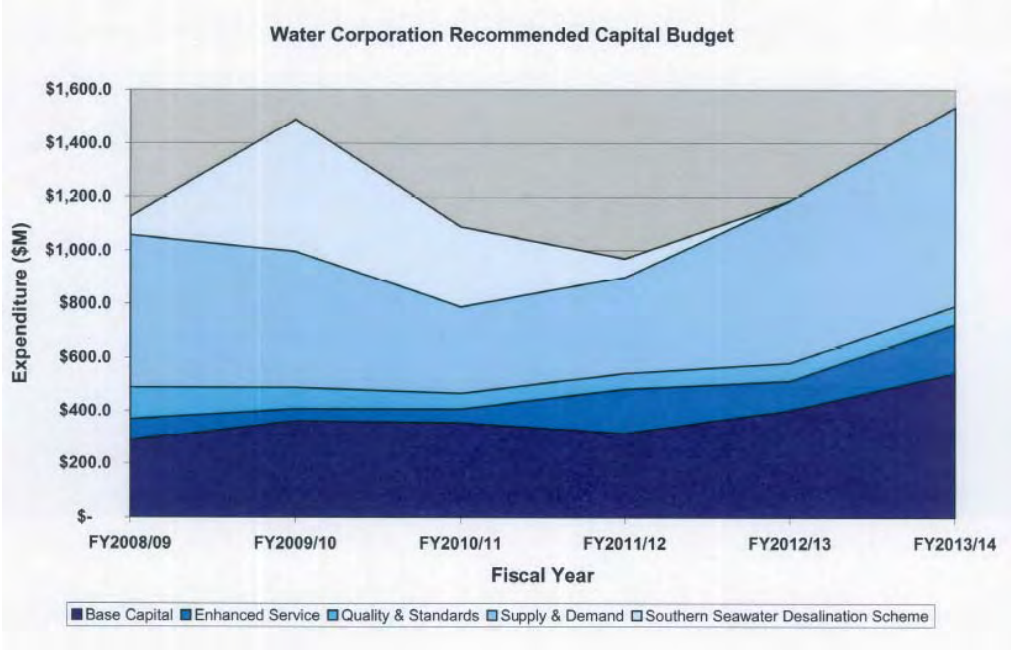
Source: Water Corporation SDP 2008-09 to 2012-13

Of the forecast $1 billion capital works program in 2008-09, we note that more than $400 million is to be spent commencing, continuing or completing major projects in regional areas of Western Australia. This includes $13.2 million on a new storage tank at Bulla Bulling, $30.6 million on the continuing development of the Bridgetown Regional Water Supply Scheme, and $20.5 million on upgrading pipelines and pump stations in the Walkaway area and a major upgrade of the Dongara Wastewater Treatment Plant.

Capital expenditure by the Corporation is expected to increase to unprecedented levels again in 2009-10 to $1,250 million, reflecting the continuing work on the Southern Seawater Desalination Plant and the major wastewater treatment plant at Alkimos. The Corporation's capital expenditure is forecast to decrease after 2009-10 to $886.9 million in 2010-11 and $790.7 million in 2011-12. It should be noted that despite the expected decrease, forecast capital expenditure in 2010-11 and 2011-12 remains significantly above historical levels. From 2011-12, the Corporations capital expenditure is expected to increase significantly once again (refer to Figure 5.1 below).

The unprecedented levels of capital expenditure being forecast will be a significant delivery challenge for the Corporation. However, as outlined in Section 3.2, we believe that the capital planning and delivery (including project management) processes that the Corporation has developed in recent years are rigorous, robust and appropriate. While delivery of such a large program will not be without its challenges, we believe that the Corporation should be able to successfully deliver its forecast capital works program.

Figure 5.1: Water Corporation Forecast Capital Expenditure



Source: Water Corporation

Figure 5.1 above illustrates the Corporation's forecast capital program from 2008-09 to 2012-14. It breaks down capital expenditure according to the Corporation's four key business drivers, and the Southern Seawater Desalination Scheme.

As the figure illustrates, capital expenditure is expected to increase significantly once again from 2012-13 onwards, which also represents the timing when the Southern Seawater Desalination Plant is expected to be fully commissioned. We believe that this represents an ideal time for the Corporation to undergo an internal review of its capital planning and delivery processes to test whether they are still adequate to deliver the increased capital works program, or whether improvements can be made.

Due to time restrictions, we have not undertaken a detailed assessment of the proposed capital expenditure or a review of the top 10 projects, however such a review would be beneficial to identifying any inappropriate expenditure.

5.3 Operational Projects – Water Corporation

5.3.1 Overview

As noted above, Western Australia and metropolitan Perth is currently one of the fastest developing regions in Australia, resulting in significant demand to provide and maintain new infrastructure assets and operational services at a rate that matches the demands of a growing revenue base. This has resulted in a significant increase in direct operational expenditure by the Corporation to meet operating costs associated with new capital programs and new level of services.

Between 2005-06 and 2007-08, direct operational expenditure (operating expenditure excluding the impact of depreciation, amortisation, and the cost of decommissioning assets) has increased by almost $100 million; from an actual expenditure of $429.8 million in 2005-06 to an actual spend of $528.8 million in 2007-08. While the reasons for this growth will be discussed in detailed in the sections below, the main increases in operating expenditure can be found in labour expenses, energy, hired and contracted services and other expenses.

5.3.2 Non-Level of Service Expenditure and Level of Service Expenditure

For the purposes of developing its annual operating expenditure budgets, Water Corporation distinguishes between non-level of service (LoS) expenditure and LoS expenditure.

LoS expenditure is a broad category encompassing three components:

1. Expenditure resulting in an improved level of service to customers, the community or to the environment. Typically these initiatives are aimed at improving the quality of the products and services provided, reducing the risk of service disruption or improving the environmental outcome of the Corporation's activities.
2. Regulatory/Externally imposed conditions - The ever increasing expectations and demands by social, environmental and economic regulators are view as a significant cost driver by the Corporation, particularly in the capital program but also with operating expenditure. The Corporation has stated that it endeavours to meet the additional requirements as efficiently as possible.
3. Ministerial requirements - As a state owned utility, the Corporation is often required to undertake activities which assist the Government in meeting its responsibilities. These requests are usually funded by the Government in the form of a Community Service Obligation payment, but some may be funded from the general customer base (for example, the renewable energy used in the Southern Seawater Desalination Plant).

The Corporation is forecasting significant increases to its LoS expenditure in its 5-Year 2008-09 SDP. These increases are primarily a result of the increased regulatory environment and the commissioning of the Southern Seawater Desalination Plant. The LoS expenditure proposed over the next regulatory period is outlined in Table 5.6 below.

Table 5.6: LoS expenditure proposed by Water Corporation ($M, nominal)

LoS Expenditure item (opex)	2008-09	2009-10	2010-11	2011-12	2012-13
Desalination					
Desalination 1	1.7	3.0	6.0	7.6	7.6
Desalination 2	-	-	-	46.2	42.7
Corporate Initiatives	7.4	15.3	22.3	29.3	34.5
Capital projects	8.1	18.6	21.9	25.5	28.3
Externally imposed initiatives	19.9	18.1	15.5	15.5	15.8
Other Items	(2.8)	2.9	5.8	4.2	3.4
Reimbursable projects	1.7	7.5	8.0	9.8	12.9
Total proposed LoS Expenditure (opex)	**35.9**	**65.3**	**79.6**	**138**	**145.2**

Source: Water Corporation

From 2008-09 to 2012-13, the LoS expenditure proposed by the Corporation is expected to increase by approximately $89.1 million. As the above table demonstrates, the Southern Seawater Desalination Plant (Desalination 2) is a dominant source of this increase in proposed LoS expenditure. Table 5.6 also shows some other significant increases in expenditure between 2008-09 and 2009-10 including corporate initiatives and capital projects, which both increase by more than 100 per cent. There is also a significant increase in reimbursable projects which increases over 340 per cent.

The Water Corporation indicated that the increase in corporate LoS initiatives is predominantly due to increases in the backflow prevention (retrofit) program. A detailed breakdown and brief review of the Corporation's proposed LoS expenditure is outlined in Appendix C.

A more detailed investigation of operating expenditure would be required to determine and to assess the reasons behind these significant increases.

Non-LoS expenditure, on the other hand, is typically defined by the Corporation as initiatives that may not be immediately necessary for the delivery of service improvements (hence referred to as 'non-LoS), but are nonetheless required to effectively manage the business in the longer term. These initiatives are required to maintain organisation capacity. In this respect, we believe the term 'non-LoS' is actually misleading as a sustained decrease in the Corporation's non-LoS expenditure items would likely result in a detrimental impact on customers' overall level of service. It may be more appropriate to refer to these initiatives in relation to the potential risk impact on levels of service.

According to the Corporation, the majority of non-LoS expenditure items are corporate initiatives, with examples including customer communications, water main asset condition inspections, alternative water source development, and catchment management practices. Non-LOS projects can also include the Corporation's ability to gather information that enables it to make better decisions. This is typically achieved through expenditure on maintenance and operating support costs for new software packages, maintenance programs, increased monitoring, studies and product testing.

The Corporation's non-LoS expenditure has varied over time. The following Table 5.7 outlines the Corporation's actual non-LoS expenditure over the period from 2005-06 to 2007-08.

Table 5.7: Water Corporation's actual non-LoS expenditure from 2005-06 to 2007-08 ($'000s nominal)

	2005-06	2006-07	2007-08
Actual non-LoS expenditure (opex)	7,475	18,294	10,690
% of total actual opex	1.7%	3.7%	2.0%

Source: Water Corporation

As Table 5.7 above demonstrates, non-LoS expenditure increased significantly in 2006-07 before decreasing in 2007-08. However, it is also clear that as a percentage of total actual operating expenditure over the same period, non-LoS expenditure is relatively insignificant.

According to Water Corporation's projections, non-LoS expenditure is expected to fall over the next regulatory period. The following Table 5.8 outlines expected non-LoS expenditure over the period form 2008-09 to 2012-13.

Table 5.8: Water Corporation's proposed non-LoS expenditure form 2008-09 to 2012-13

	2008-09	2009-10	2010-11	2011-12	2012-13
Proposed non-LoS expenditure (opex)	7,959	7,959	2,723	684	776
% of total proposed opex	1.3%	1.3%	0.4%	0.1%	0.1%

Source: Water Corporation

As Table 5.8 above shows, proposed non-LoS expenditure is forecast to decrease over the next regulatory period, from almost $8 million in 2008-09 to $0.8 million in 2012-13. It can also be seen from the above table that non-LoS expenditure represents only a very minor proportion of the Corporation's total proposed operating expenditure.

There are a myriad of non-LoS expenditure items included in the Corporation's proposed expenditure. Examples of proposed non-LoS expenditures items include asset inspections, review and improvement of maintenance and asset management systems, alliance contract renewal, IT support, and HR and training programs. A brief high-level review of proposed non-LoS expenditure did not identified any inappropriate expenditure.

5.3.3 *Historical expenditure*

The following section will provide a high-level analysis of the Corporation's actual direct operating expenditure against annual budgets and against the operating projections provided to the Authority in 2005 as part of the inquiry into urban water and wastewater pricing.

The following table shows the direct operating expenditure for the period 2005-06 to 2007-08 proposed by the Corporation during the 2005 pricing inquiry and compares it to the predicted actual expenditure and the Corporation's actual expenditure.

The adjustments outlined in **Error! Not a valid bookmark self-reference.** have been provided by the Corporation and include the impact associated with the increase in the operating efficiency target from 1.6 per cent to 2.0 per cent that occurred during the period, and the greater than expected inflation and property growth that was experienced in the state during the period. The adjustments also include a number of LoS expenditure items that were not originally included in the 2004-05 SDP (from which the 2005 pricing inquiry projections were derived from), and the operating expenditure associated with the desalination plant. Finally, adjustments for assets expensed have been included.

Table 5.9: Adjustments to proposed operating expenditure forecasts ($'000s nominal)

	2005-06	2006-07	2007-08
Proposed Opex (2005 Pricing Inquiry)	396,350	419,737	452,936
Efficiency Adjustments	(3,094)	(4,737)	(6,676)
Cost Escalation	17,650	29,800	42,986
Growth Escalation	3,320	8,943	12,987
Additional LoS expenditure			
Drought response	-	2,094	7,018
Water quality improvements	-	2,302	4,205
Overflow risk management	-	561	1,351
GHG & Sustainability initiatives	-	175	730
Infill sewerage program	-	100	335
Compliance/Regulation	-	1,900	2,461
Improved asset performance	-	-	1,216
Asset write-offs	-	-	3,676
Desalination Expenditure	-	(7,392)	89
Assets expensed	11,000	42,400	6,400
Predicted Actual Expenditure	425,226	495,882	530,025
Actual Operating Expenditure	429,800	491,600	528,800
Variance	4,574	(4,282)	(1,225)
Variance (%)	1.1%	-0.9%	-0.2%

Source: Water Corporation

When the adjustments are factored into the Corporation's 2005 pricing inquiry projections, the predicted actual expenditure varies only slightly from the Corporation's actual operating expenditure.

The following table shows the variation between the annual budget and the Corporation's actual direct operating expenditure for the period 2005-06 to 2007-08.

As shown in **Error! Not a valid bookmark self-reference.** above, the Corporation exceeded its regulated operating budget in each of the three years shown, with the largest variance (12.6 per cent) occurring in 2006-07. A detailed breakdown of the variances was provided by the Corporation.

Table 5.10: Operating Expenditure – Budget versus Actual ($'000s nominal)

	2005-06	2006-07	2007-08
Annual Operating Budget	395,100	436,700	511,600
Actual Operating Expenditure	429,800	491,600	528,800
Variance	34,700	54,900	17,200
Variance (%)	+8.8	+12.6	+3.4

Source: Water Corporation

According to the analysis provided by the Corporation, the over-expenditure in 2005-06 was primarily due to the following factors:

- Higher than anticipated labour costs ($8.9 million) due to a once-off adjustment to superannuation provisions, wages and salary pressures, higher usage of agency labour and higher than expected activity levels for external contracts.
- Plant and equipment ($3.0 million) expenditure associated with increased operations and maintenance costs for vehicles/plant and increased levels of non-regulated business activity by commercial service units.
- Hired and contracted services ($8.0 million) being greater than anticipated due to increased reactive maintenance and greater mechanical and electrical maintenance at Woodman Point wastewater treatment plant, and
- Other expenses exceeding budget ($13.6 million) due to expensing a number of projects that were initially expected to be capitalised, and a once-off adjustment to workers compensation provisions.

The actual operating expenditure in 2006-07 exceeded the approved regulated budget by $54.9 million. The Corporation identified the following key factors contributing to the over-expenditure:

- Higher labour costs ($5.9 million) due to increased operations and maintenance activities across the state and additional activity levels for reimbursement and other external infrastructure projects.
- Plant and equipment exceeding budget ($4.2 million) due to increased operations and maintenance costs for vehicles/plant and increased levels of non-regulated business activity.
- Hired and contracted services ($4.7 million) being greater than expected due mainly to higher levels of non-regulated business activity, increased consultancies relating to research and development and additional operating activities due to continuing dry climate, and
- Other expenses ($37.2 million) significantly exceeding budget due primarily to the expensing of a number of projects that were originally expected to be capitalised, presumably due to change in accounting standards.

In 2007-08, the actual regulated operating expenditure by the Corporation exceeded the budgeted operating expenditure by $17.2 million. The Corporation has attributed the over spend to the following key factors:

- Higher than expected materials expense ($3.9 million) relating to increased levels of non-regulated business activity, particularly for external commercial contract work within the metropolitan area.
- Plant and equipment ($4.5 million) exceeding budget due to increased leasing, operations and maintenance costs for vehicles/plant, increased levels of non-regulated business activity and additional costs arising from the deferral of capital projects, and
- Other expenses ($11.6 million) significantly exceeding forecast expenditure due mainly to a $10 million contribution to the Department of Sport and Recreation for the relocation of recreational facilities at Logue Brook Dam, and the expensing of costs related to a number of projects that did not proceed

With the exception of 2007-08, we would have expected the Corporation's actual operation expenditure performance against budgets to be better given the relative sophistication and robustness of the capital and operational processes in place. Going forward, we believe that the Corporation should be able to consistently achieve actual expenditure within a target range of plus/minus of five percent.

5.3.4 *Proposed expenditure*

The following section will provide a high-level analysis of the Corporation's actual direct operating expenditure against annual budgets and against the operating projections provided to the Authority in 2005 as part of the inquiry into urban water and wastewater pricing.

The following Table 5.11 shows the Corporation's proposed direct operating expenditure over the next five year period from 2008-09 to 2012-13. As We note the increase in the labour cost item outlined in Table 5.11. A brief analysis indicates that this item increases by 3.3 per cent in 2009-10, and then increases by 2.3 per cent per annum there after. It is presumed that this initial increase is due to the current enterprise bargaining agreement, while the 2.3 per cent increases relate to the bargaining agreement soon to come into effect. If the 2.3 per cent increases in labour expenditure relate to an already agreed bargaining agreement, then we note that labour expenditure is expected to increase at or below inflation in the short term (i.e. remain stable or fall slightly in real terms).

Table 5.11 below clearly illustrates, the Corporation's direct operating expenditure is expected to increase significantly, from $596.3 million in 2008-09 to $737.5 million in 2012-13. This represents an increase of 23.7 per cent.

We note the increase in the labour cost item outlined in Table 5.11. A brief analysis indicates that this item increases by 3.3 per cent in 2009-10, and then increases by 2.3 per cent per annum there after. It is presumed that this initial increase is due to the current enterprise bargaining agreement, while the 2.3 per cent increases relate to the bargaining agreement soon to come into effect. If the 2.3 per cent increases in labour expenditure relate to an already agreed bargaining agreement, then we note that labour expenditure is expected to increase at or below inflation in the short term (i.e. remain stable or fall slightly in real terms).

Table 5.11: Water Corporation's recommended Operating Budget 2008-09 to 2012-13 ($M nominal)

Program	2008-09	2009-10	2010-11	2011-12	2012-13
Labour	216.4	223.6	228.8	234.1	239.6
Materials	17.3	17.9	18.3	18.8	19.2
Plant and Equipment	25.7	26.5	27.1	27.8	28.4
Alliance Contracts	71.7	74.1	75.8	77.6	79.4
IT & Telecommunications	29.7	30.7	31.4	32.1	32.8
Property Expense	11.5	11.9	12.1	12.4	12.7
Infrastructure Maintenance	45.5	47	48.1	49.3	50.4
Consultants	8.7	9	9.2	9.4	9.6
Corporate Charges	23.4	24.2	24.8	25.4	25.9
Employee Expenses	12	12.4	12.7	13	13.3
Internal Services	-3.1	-3.2	-3.3	-3.3	-3.4
Energy	55.9	57.8	59	60.4	61.7
Chemicals	23.6	24.4	25	25.5	26.1
CSU/ISU	7.9	9.1	10.4	10.6	10.8
Support allocated to Capital	-31.1	-30	-28.6	-29.5	-30.5
Financial Provisions	11.5	14.4	14.4	14.4	14.4
Sub Total	**526.5**	**549.6**	**565.1**	**577.6**	**590.4**
New projects and efficiency targets	66.6	76.6	85.6	145.1	144.2
Sub Total	**593.1**	**626.1**	**650.8**	**722.7**	**734.5**
Harvey Water Trade Entitlements	0.2	-	-	-	-
Assets Expenses	3	3	3	3	3
Total proposed operating expenditure	**596.3**	**629.1**	**653.8**	**725.7**	**737.5**

Source: Water Corporation; figures may not add due to rounding

Given our analysis of the Corporation's operational processes (see Section 4.2) and the high-level nature of this review, we have not identified any inappropriate operating expenditure on the part of the Corporation that has been proposed for the next five year period.

5.3.5 *Southern Seawater Desalination Plant Energy Procurement*

Water Corporation, in discussions with the previous Western Australian Government, has made the decision that the new desalination plant will be powered by renewable energy, consistent with the first desalination plant. During these discussions, Water Corporation has stated that the previous Government indicated that it was willing to underwrite the additional cost of renewable energy over traditional (and cheaper) black energy. While how the previous Government would underwrite the additional cost was never finalised, the two most obvious methods would be through additional Community Service Obligations (CSOs) or allow Water Corporation to capture the additional cost in water prices.

For the new desalination plant, Water Corporation has proposed to procure renewable energy from two tranches of suppliers:

- Tranche 1 – commercially proven technology on this scale [redacted]
- Tranche 2 – commercially unproven technology on this scale [redacted]

The decision to procure renewable energy from two Tranches is thus far a purely independent commercial decision on the part of Water Corporation. We are not aware of any WA Government direction to procure renewable energy specifically via the two tranches or to have a mix of commercially proven and untested sources.

Water Corporation has submitted a Cabinet briefing outlining the proposed approach and is awaiting comment.

Water Corporation has undertaken a competitive tendering procurement approach to identifying the preferred energy suppliers.

Tranche 1 – commercially proven technology on this scale

[redacted]

[redacted]

[redacted]

Tranche 2 – commercially unproven technology on this scale

[redacted]

[redacted]

[redacted]

[redacted]

We do not consider that the Water Corporation's proposed strategy is justifiable for the following reasons:

- If the Government of the day instructs Water Corporation that the new desalination plant must be powered by renewable energy, then Water Corporation has an obligation to their customers to source that renewable energy at lowest possible cost. As such, Water Corporation should seek to source 100 per cent of the desalination plant's energy requirements from the potentially cheaper (and commercially proven) Tranche 1 energy supplier.
- Water Corporation's core responsibility is the provision of water and wastewater related services within Western Australia. It is not within Water Corporation's core responsibilities to engage in industry support and/or research and development over and above stated government instructions/obligations, particularly where such activities would impact on water prices for its customers.

- Given the proposed quantum of renewable energy to be supplied via Tranche 2 (maximum [redacted] per cent of the new desalination plant's requirements) is relatively minor compared to Water Corporation's total energy requirements, it is unclear whether the proposed support for alternative renewable energy would have any material impact on investment in the sector.

However, we would be inclined to support the proposed strategy if one or more of the following conditions were met:

- Water Corporation received explicit instructions from the Government of the day to source energy from alternative and commercially unproven renewable sources, and/or
- Sourcing energy from Tranche 2 energy suppliers resulted in no impact on water prices for customers. This could be achieved by government underwriting the 'premium' via a CSO or grant (for example), or whereby the Tranche 2 energy can be sourced at the same price as Tranche 1, and/or
- Water Corporation had received a clear mandate from customers (via a targeted survey) that clearly demonstrated that customers are willing to pay a premium on water prices for Water Corporation to source energy from new alternative (and untested) renewable energy sources.

5.4 Key Findings

Given the recent downturn in the economy, we would expect that the assumptions made when calculating the escalation factor included in the proposed capital expenditure will have significantly changed. As such, in reality we would expect this factor to be much lower than predicted.

Based on the high-level analysis of the Corporation's historical capital expenditure and the Corporation's actual performance against budgeted capital expenditure, we have not identified any inappropriate historical capital expenditure.

We believe that once the Southern Seawater Desalination Plant is fully commissioned, the Corporation should consider undergoing an internal review of its capital planning and delivery processes to test whether they are still adequate to deliver the increased capital works program that is expected from 2012-13 onwards.

With the exception of 2007-08, we would have expected the Corporation's actual operation expenditure performance against budgets to be better given the relative sophistication and robustness of the capital and operational processes in place. Going forward, we believe that the Corporation should be able to consistently achieve actual expenditure within a target range of plus/minus of five percent.

Given our analysis of the Corporation's operational processes (see Section 4.2) and the high-level nature of this review, we have not identified any inappropriate operating expenditure on the part of the Corporation that has been proposed for the next five year period.

In relation to the Southern Seawater Desalination Plant energy procurement, we do not consider that the Water Corporation's proposed strategy is justifiable for the following reasons:

- Water Corporation has an obligation to their customers to source renewable energy at lowest possible cost and should therefore seek to source 100 per cent of the desalination plant's energy requirements from the Tranche 1 energy supplier.
- It is not within Water Corporation's core responsibilities to engage in industry support and/or research and development over and above stated government instructions/obligations.
- It is unclear whether the Corporation's proposed support for alternative renewable energy would have any material impact on investment in the sector.

However, we would be inclined to support the proposed strategy if one or more of the following conditions were met:

- Water Corporation received explicit instructions from the Government of the day to source energy from alternative and commercially unproven renewable sources, and/or
- Sourcing energy from Tranche 2 energy suppliers resulted in no impact on water prices for customers. This could be achieved by government underwriting the 'premium' via a CSO or grant (for example), or whereby the Tranche 2 energy can be sourced at the same price as Tranche 1, and/or
- Water Corporation had received a clear mandate from customers (via a targeted survey) that clearly demonstrated that customers are willing to pay a premium on water prices for Water Corporation to source energy from new alternative (and untested) renewable energy sources.

6 Summary Findings / Recommendations

6.1 Overview

This section provides a summary of our key findings in each of the areas covered by the review.

6.2 Corporate / Strategic Planning

The SAMP states that the key features of the desired business state are consistent with the Water Corporation's Purpose and its Business Story, however we have not sighted these documents so can not verify this statement. As a minimum, it would be expected that the key features and the critical strategies in the SAMP reflect the broader statements outlined in the Water Corporation's Purpose and its Business Story

While a direct linkage of strategies and objectives between the SAMP and the SDP is not critical issue, it does provide a clear and accountable explanation of the various business strategies and priority areas back through the document hierarchy, ensuring consistency with the Water Corporation's Purpose and its Business Story. We would recommend that the Water Corporation seek to investigate this issue.

The specific business priorities in the SCI mention the four key priority areas identified in the SDP however there are another twelve business priorities included. There is no mention in the SCI that four of the areas were, in the SDP, highlighted as strategic priorities. This lack of consistency gives the impression that the four strategic areas are perhaps not as important as indicated in the SDP. We would recommend that the Water Corporation investigate this issue.

We see no specific reason why the SDP could not be made into a public document consistent with the Corporation's status as a public utility. We would recommend that the Water Corporation investigate this issue.

6.3 Capital Processes

After reviewing the Corporation's processes and documentation for developing planning proposals, we are satisfied that the Corporation has a clear, documented, robust and rigorous approach to project planning. It is our view that the planning process outlines clear responsibilities of key personnel, and adequately covers all areas of planning that one would view as critical.

We are satisfied that the Corporation has developed a robust and rigorous capital prioritisation process which is underpinned by the Corporation's three CIPs. We note that a risk-based methodology is at the heart of the Corporation's project prioritisation process, with the four main risk categories or business drivers used for assessing and reporting capital investment programs. We note that the capital prioritising process is supported by clear and detailed Asset Acquisition Guidelines.

In our opinion, the Business Case Guidelines for Capital Investment Projects developed by the Corporation provide clear guidance to Planning Managers and other relevant staff when undertaken a planning business case. Should the Business Case Guidelines be prudently followed, the guiding principles be adhered to and adequate training and mentoring be available to the individual undertaking the business case, we believe that a Planning Business Case developed by the Corporation is likely to result in a recommended option that is both robust and appropriate.

Based on our review, we consider that the procurement and delivery strategies currently adopted by the Corporation are innovative and encourage competitive delivery of the capital investment program.

We consider that the use of alliance contracts will facilitate delivery of the capital program in an efficient and effective manner, subject to pain-share and gain-share arrangements, and market testing, undertaken every three to five years, to ensure that the alliance and long term partnering arrangements are still competitive.

By regularly reviewing the split of work delivered by 'traditional' and 'alternative' delivery strategies, the Corporation is well placed to optimise delivery of its capital investment program.

Based on our review of sample documentation, we are satisfied that the Corporation has in place robust procedures for the delivery of its capital investment projects.

The Corporation's project close out and post implementation reviews provide a mechanism by which lessons learned during project development implementation phases may be used to inform the capital investment planning process.

Based on the above, we believe that the Corporation will be in a position to continue to improve its performance in relation to delivery of its capital investment program over the coming regulatory period. We expect that this will be reflected in an improvement of KPI scores which measure the time management of completed projects and the number of projects completed within 20 per cent of target cost by Project Practical Completion.

6.4 Operations Processes

We are satisfied that the Corporation has developed a series of robust and rigorous operational planning and delivery processes that align appropriately with the Corporation's Risk Framework and its overall corporate and strategic objectives. We are also satisfied with the Corporation's process for assessing and authorising increases to base operating expenditure, noting the Macro Budget Guidelines that the Corporation has developed to inform the process.

We believe that the Corporation's practice of reprioritising new operating expenditure items under a $100,000 threshold to be good practice.

While we note that the Action Briefs are based on a summarised business case, we recommend that the Corporation should seek to improve the level of information and detail provided by process owners in the Action Briefs to better inform the macro budget process.

We noted during our interviews with the Corporation that the standard of operating funding requests varied significantly from Division to Division. We believe there is significant scope for improvement in the quality of funding requests by requiring Divisions to undertake a formal review of Divisional requests before submission to the Evaluation Committee. This would improve the overall quality of requests that the Evaluation Committee views, whilst continuing to foster a culture of continuous improvement.

We are satisfied to note that the Corporation is embarking on a pilot program of Zero-Based Budgeting which will require an examination of base budget costs to ensure they reflect the efficient cost of undertaking its 'business as usual' activities. We believe that the Corporation's proposed rolling five-year program is both adequate and appropriate, as we note that a properly implemented and detailed Zero-Based Budgeting review is a time-consuming and resource-intensive process.

We recommend the Corporation continue to endeavour to achieve the current real operating efficiency target of 1.88 per cent. We are confident that the Corporation can continue to achieve the target based, noting that the Corporation has itself stated that it has successfully achieved the target in the past.

We recognise the Corporation's aim of continuing to seek a general efficiency requirement from all Divisional and Business Units is in line with good practice. We believe that this will assist the Corporation in undertaking continuous operating improvements, and we encourage the Corporation to continue this policy.

6.5 Historical and Proposed Expenditure

Given the recent downturn in the economy, we would expect that the assumptions made when calculating the escalation factor included in the proposed capital expenditure will have significantly changed. As such, we would expect this factor to be much lower than predicted.

Based on our brief, high-level analysis of the Corporation's historical capital expenditure and the Corporation's actual performance against budgeted capital expenditure, we did not identify any inappropriate historical capital expenditure.

We believe that once the Southern Seawater Desalination Plant is fully commissioned, the Corporation should consider undergoing an internal review of its capital planning and delivery processes to test whether they are still adequate to deliver the increased capital works program that is expected from 2012-13 onwards.

With the exception of 2007-08, we would have expected the Corporation's actual operation expenditure performance against budgets to be better given the relative sophistication and robustness of the capital and operational processes in place. Going forward, we believe that the Corporation should be able to consistently achieve actual expenditure within a target range of plus/minus of five percent.

Given our analysis of the Corporation's operational processes (see Section 4.2) and the high-level nature of this review, we have not identified any inappropriate operating expenditure on the part of the Corporation that has been proposed for the next five year period.

In relation to the Southern Seawater Desalination Plant energy procurement, we do not consider that the Water Corporation's proposed strategy is justifiable for the following reasons:

- Water Corporation has an obligation to their customers to source renewable energy at lowest possible cost and should therefore seek to source 100 per cent of the desalination plant's energy requirements from the Tranche 1 energy supplier.
- It is not within Water Corporation's core responsibilities to engage in industry support and/or research and development over and above stated government instructions/obligations.
- It is unclear whether the Corporation's proposed support for alternative renewable energy would have any material impact on investment in the sector.

However, we would be inclined to support the proposed strategy if one or more of the following conditions were met:

- Water Corporation received explicit instructions from the Government of the day to source energy from alternative and commercially unproven renewable sources, and/or
- Sourcing energy from Tranche 2 energy suppliers resulted in no impact on water prices for customers. This could be achieved by government underwriting the 'premium' via a CSO or grant (for example), or whereby the Tranche 2 energy can be sourced at the same price as Tranche 1, and/or
- Water Corporation had received a clear mandate from customers (via a targeted survey) that clearly demonstrated that customers are willing to pay a premium on water prices for Water Corporation to source energy from new alternative (and untested) renewable energy sources.

As indicated previously, due to time constraints, we have not been able to undertake a full assessment of the Water Corporation's capital or operating expenditure programs including, for example, a detailed assessment of the top 10 capital projects / programs. We believe that such an assessment is important in identifying areas of capital or operating expenditure that may be inefficient.

7 Appendices

7.1 List of Appendices

Appendix A – List of information supplied to Halcrow from Water Corporation

Appendix B – Water Corporation's risk management approach

Appendix C – Water Corporation's proposed level-of-service expenditure

Appendix A Correspondence

A.1 List of Information Supplied to Halcrow

ERA - Halcrow Review Nov/Dec 08

#	Presenter - source	Document Name	Type	Confidential	Electronic Copy	Date Received	Comments
1	Garth Walter	WATER CORPORATION ACCOUNTABILITIES FRAMEWORK Version 6	Print out (2p)	No	Scanned	07/11/2008	
2		Our Business Direction 2008-2009	Booklet (12p)	No	Scanned	07/11/2008	
4		Strategic Development Plan 2008/2009 - 2012/2013	Document (17p)	Yes	Scanned	07/11/2008	
5		Statement of Corporate Intent 2008/2009	Document (13p)	No	Scanned	07/11/2008	
6		Corporate Business Calendar 2008 (as at 3 Oct 2008)	Print out (1p)	No	Scanned	07/11/2008	
7	Mike Taylor	Water Corporation - Capital Investment Program Formulation	Presentation (14slides)	No	Scanned	07/11/2008	
8		Additional slide: Water Corporation recommended capital budget	1 slide printout	No	Scanned	07/11/2008	
9		Financial Authorisation Standard S072 (19Feb 08)	Standard (Page1, 18-24)	No	Scanned	07/11/2008	
10		Business Case Guidelines for Capital Investment (16Jan07)	Guidelines (16p, no attach)	No	Scanned	07/11/2008	
11		Post Implementation Review Guidelines for Capital Investment	Guidelines (page 1-9)	No	Scanned	07/11/2008	
12		Short Planning Business Case - C-S01487 SDOOL Duplication SV9 to Cape	Document (41p)	Yes	Scanned	07/11/2008	
13		Infrastructure Planning Business case - Subiaco Wastewater Treatment Plant - Strategic Overview	Document (50p)	Yes	Scanned	07/11/2008	
14		Implementation Business Case & Budget Release - C-S01450 Geraldton PS1Durlacher St O/Storage (D)	Document	Yes	Scanned	07/11/2008	
15		Implementation Business Case, Infrastructure Project - Category B - C-W01896 Hopetoun WS: Interim Source UPGR 07/08	Doc	Yes	Scanned	07/11/2008	
16		Implementation Business Case - Category B - C-S00875 Perth Main Sewer Section 5 Stage 2	doc	Yes	Scanned	07/11/2008	
17		Documentation for project C-W00793 Sawyers Valley 50ML Tank (Planning BC, Budget Release, IMPL. BC, Change of Control Form, Close Out Report, PIR)	doc	Yes	Scanned	07/11/2008	
19	Mark Leathersich	State Wide Planning program 2008/2009 to 2010/11	Presentation print out (20slides)	Yes	Scanned	07/11/2008	
20		Sustainability Symposium - integrating Sustainability into Infrastructure Planning	Presentation print out (19slides)	No	Scanned	07/11/2008	
21		Planning Process manual	Manual (81 pages)	No	Scanned	07/11/2008	
26	Graham Cargeeg	Asset Management Nov2008	presentation (22slides)	No	Scanned	07/11/2008	
27		Future SAMP and the Hierarchy of Planning	1 slide	No	Yes	11/11/2007	
28	Darren Arland	Corporate Risk Profile (7/11/2008)	Print out (1p)	Yes	Scanned	07/11/2008	
29		Corporate Risk Profile - Risk Identification Matrix (7/11/2008)	Print out (14p)	Yes	Scanned	07/11/2008	
30		Risk Mitigation Plan - Ineffective isolation of electrical sources	Print out (1p)	No	Scanned	07/11/2008	
31		Risk Management Policy	Guidelines (12p)	No	Scanned	07/11/2008	
32		Risk Assessment Criteria - Consequence Rating	Print out (3p)	No	Scanned	07/11/2008	
33		Risk Profile 2007	Print out (13p)	No	Scanned	07/11/2008	
34		Project Delivery Profile - CW01446 Ravenswood Pump Station	Print out (10p)	Yes	Scanned	07/11/2008	
35		PCY 135 Risk Management	Policy (2p)	No	Scanned	07/11/2008	
36		Treatment Actions Profile - Domain: Environment	Print out (1p)	Yes	Scanned	07/11/2008	
						07/11/2008	
37	Ken Walker	Risk Management septi 2008 - presentation plus description	Presentation (27slides)	No	Scanned	07/11/2008	
38		System Risk Assessment	Draft (9Pages)	No		07/11/2008	
39	Neil La Roche	Halcrow Review of Water Corporation - Project Management Branch	Presentation (24slides)	No	Scanned	07/11/2008	
40		Partner Delivery - Status of Bundles 11/08/08	Printout (1p)	Yes	Scanned	07/11/2008	
41	Paul Ranieri	Tactical Asset Management	presentation (14slides)	No	Yes	11/11/2008	
42	Janet Ham	Renewals	presentation	No	Yes	11/11/2008	
	Additional Documents:						
43		Organisation chart as of Nov 2008	chart	No	Yes	11/11/2008	
44		Capital Project Budget Release - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
45		Captial Project Budget Variation Eg 1 - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
46		Captial Project Budget Variation Eg 2 - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
47		Captial Project Budget Variation Eg 3 - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
48		Capital Project Scope Change - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
49		Memorandum - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
50		Post Implementation Review - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
51		Post Implementation Review Summary - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	
52		Project Closeout Report Example - Sawyer Valley 50ML Tank	Document	No	Scanned	07/11/2008	

Additional Documents:							
53		Strategic Asset Management Plan (SAMP)	PDF (103p)	YES	Yes	18/11/2008	
54		Annexes to the Asset Acquisition Guidelines	PDF (22 p)	No	Yes	18/11/2008	
55		Presentation on Operating Efficiency Targets	Powerpoint	No	Yes	18/11/2008	
56		2003 Wastewater Benchmarking Exercise with SA	Document	YES	Yes	18/11/2008	
57		Strategic Development Plan 2008/2009 - 2012/2013	PDF (17p)	Yes	Yes	19/11/2008	
58		Statement of Corporate Intent 2008/2009	PDF (14p)	No	Yes	19/11/2008	
59		Delivery Services Plan (DSP)	PDF (4p)	no	Yes	19/11/2008	
60		Delivery Services Process Story	PDF (1p)	no	Yes	19/11/2008	
61		Service Customer Story	PDF (2p)	no	Yes	19/11/2008	
62		Capital Investment Guidelines	PDF (5p)	NO	Yes	19/11/2008	
63		Presentation: Integrating Sustainability into Infrastructure Planning	PDF (19p)	no	Yes	19/11/2008	

		sent	Received
Requested docs	Strategic Asset Management Plan (SAMP)	14/11/2008	18/11/2008
	Delivery Services Plan (DSP)	14/11/2008	19/11/2008
	Service Customer Plan (SCP)	14/11/2008	19/11/2008
	Annexes to the Asset Acquisition Guidelines	17/11/2008	18/11/2008
	Capital Investment Guidelines	17/11/2008	19/11/2008
	'2003 Wastewater Benchmarking Exercise with SA	18/11/2008	18/11/2008
	Presentation: Integrating Sustainability into Infrastructure Planning	19/11/2008	19/11/2008
	Operating Expenditure Guidelines	19/11/2008	24/11/2008
	Details on operating expenditure plans/strategies	19/11/2008	21/11/2008
	Question on the regularity to which they report actual performance against the opex budgets	19/11/2008	24/11/2008
	Question on the regularity to which they review the opex base	19/11/2008	24/11/2008
	Monthly actual opex figures for key programs across a full year	19/11/2008	24/11/2008
	Details requested on operating expenditure delivery strategies	19/11/2008	24/11/2008
	Proportion of opex projects/programs that are outsourced	19/11/2008	24/11/2008
	Examples of major opex projects/programs business cases	19/11/2008	24/11/2008
	Details on numbers of staff within the 7 business groups	19/11/2008	24/11/2008

Appendix B Risk Management

B.1 Water Corporation's Risk Management Approach

The structured and systematic approach taken by the Corporation to Risk Management is a process designed to assist in decision making and planning based on an understanding of the potential threats (risks) and opportunities to the Business. The five steps of the risk management process are supported and improved by regular monitoring and review of risks at all levels. The definition and analysis of risk is also enhanced through communication and consultation with stakeholders as appropriate.

Establish the Context

Considered to be the most important, the first step in the risk management process, the context of the risk must be established in two elements before it can be identified, analysed and evaluated for treatment.

The methodology, as defined by the Risk Management Framework, is used to identify and assess the risks, which in turn define the scope of work for the risk assessment (risk profile) of the process, activity, function or task to be examined.

Water Corporation applies Risk Management to all levels of their Business and across all of operations, their processes and projects. The various contexts in which risk profiles for the Corporation are developed are established through the risk profiling structure below (Figure B.1):

Figure B.1 – Establishment of Context: Risk Profiling Structure

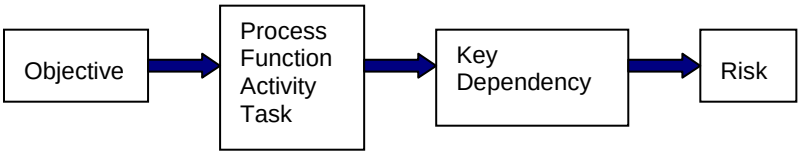
The strategic risk profile relates to external threats and opportunities that have the potential to impact on the Corporation and its strategic direction.

The tactical risk profile as derived from the Corporate Risk Profile is defined by the unacceptable Process risks identified that have the potential to impact on process deliverables, for example ensuring drinking water quality standards or levels of service are maintained.

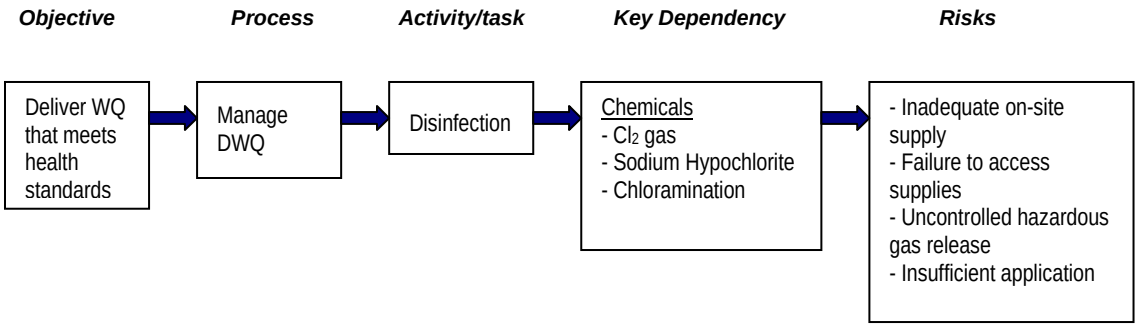
The Operational risk profile is determined through a combination of the Regional and Operational risk profiles, related respectively to integration processes/service delivery at a regional level and critical infrastructure. Of the latter, the risks identified affecting key infrastructure include (but are not restricted to) the following areas: Asset Management, Water Quality, Environment and Occupational Safety and Health (OSH).

Risk Identification

The preferred approach that the Corporation uses to identify risks follows the Work Breakdown Structure (WBS);

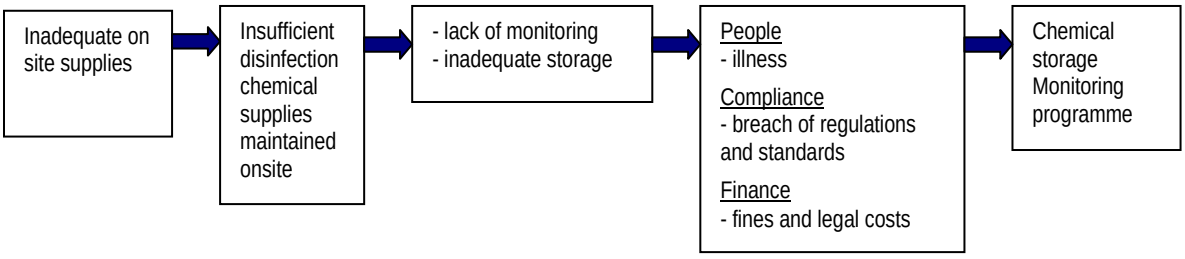


which may be applied as follows in the example below:



Risks are then defined through using four basic elements including: Risk (short title and Risk Description, Causes (contributors to the risk), Consequences (potential

impact of risk event occurring) and Controls (mitigation measures). An example of a defined risk may be found below as follows:



Risk Analysis

Following risk identification, the risk is analysed to assess the risk as a combination of the impact to the Business and the likelihood of the impact occurring (**Risk = Consequence x Likelihood**). There are three risk phases in which risks are measured:

1. *Inherent level of risk* – level of risk in absence of any controls
2. *Current residual level of risk* – level of risk with current control measures in place
3. *Target level of risk* – Projected level of risk with current controls in place plus implementation of proposed mitigation action plan(s)

The latter risk level is relevant only where the current controls in place are not sufficient to mitigate the current residual risk to an acceptable level of tolerance or risk appetite. Figure B.2 shows conceptually how the Corporation regards the level of risk and their appetite (tolerance) for it.

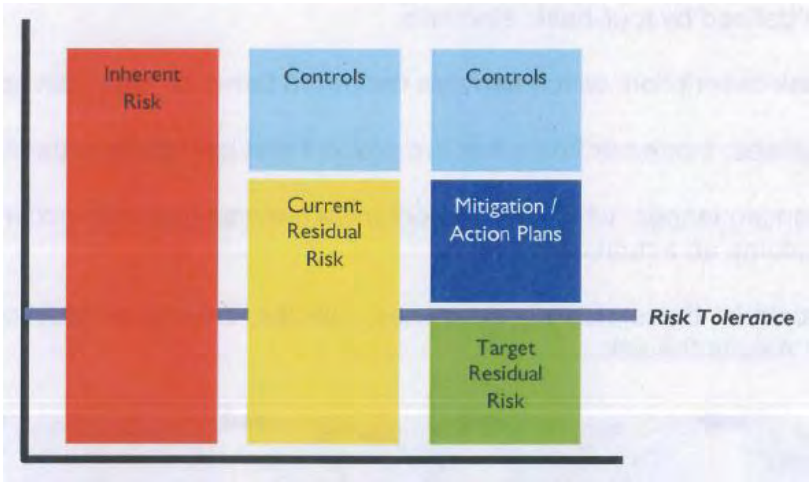


Figure B.2 - Analysis of Risk Level

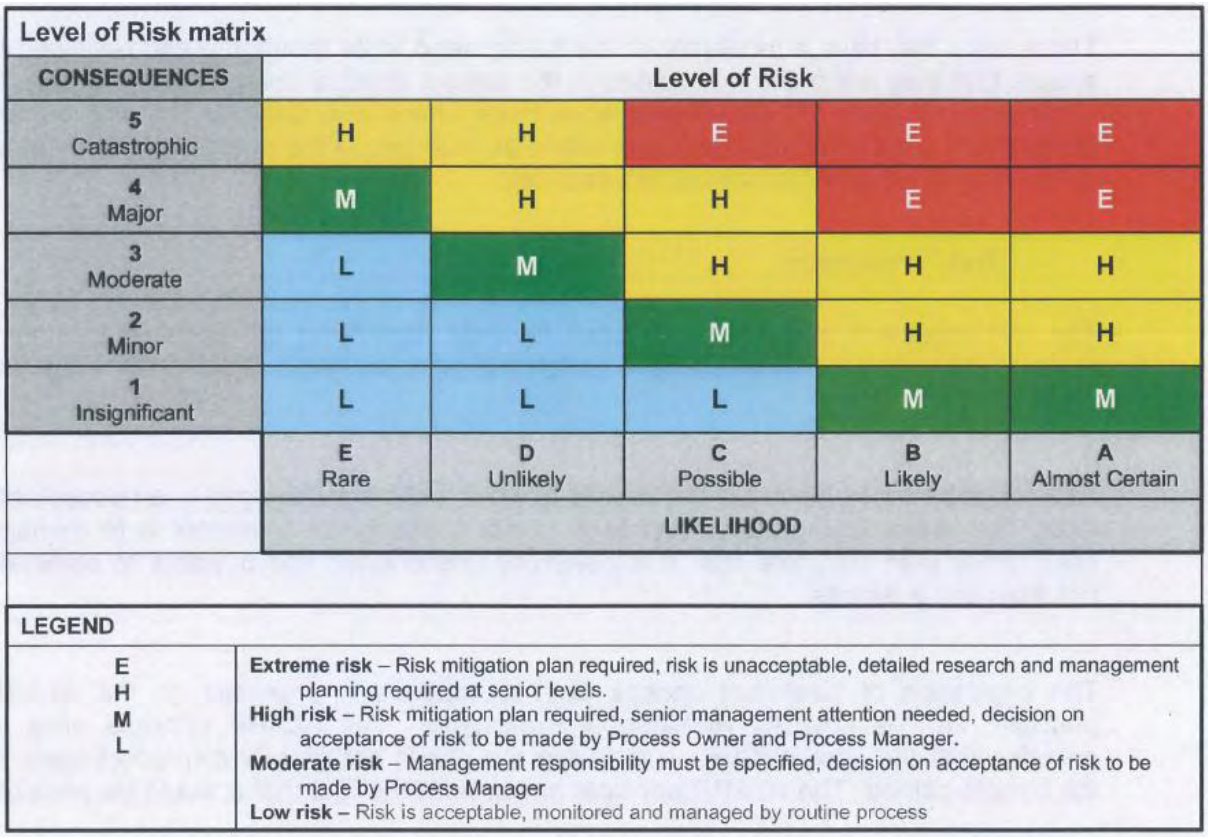
Risk analysis enables the Corporation to prioritise risks based on their risk level (combination of consequence and likelihood), providing the first indication of whether the current residual risk requires treatment by way of a mitigation or action plan.

The measure of Control Effectiveness is also applied (along with the main two risk elements of consequence and likelihood) as required for the risk assessment criteria to determine the level of risk.

Further details on the risk assessment criteria used, including the six consequence criteria (Finance, People, Environment, Service Interruption, Reputation and Compliance), the likelihood and control effectiveness ratings may be found in following sections.

Risk Evaluation

The purpose of this stage in the Risk Assessment process is to determine which risks are unacceptable and require action to mitigate them. Risk tolerance (appetite) represents the amount of risk that the business is willing to accept in order to obtain an appropriate level of reward, where the reward relates directly to the achievement of the Corporation's business objectives. The appetite for risk is defined by the strategic and operational objectives of the Corporation in delivering its services and products.



Level of Risk matrix					
CONSEQUENCES	Level of Risk				
5 Catastrophic	H	H	E	E	E
4 Major	M	H	H	E	E
3 Moderate	L	M	H	H	H
2 Minor	L	L	M	H	H
1 Insignificant	L	L	L	M	M
	E Rare	D Unlikely	C Possible	B Likely	A Almost Certain
	LIKELIHOOD				

LEGEND	
E H M L	**Extreme risk** – Risk mitigation plan required, risk is unacceptable, detailed research and management planning required at senior levels. **High risk** – Risk mitigation plan required, senior management attention needed, decision on acceptance of risk to be made by Process Owner and Process Manager. **Moderate risk** – Management responsibility must be specified, decision on acceptance of risk to be made by Process Manager **Low risk** – Risk is acceptable, monitored and managed by routine process

Figure B.3 - Corporate Risk [Evaluation] Matrix

The way in which risks are evaluated is through utilising the Corporate Risk Matrix (Figure B.3), where the levels of risk are based on the combination of consequence and likelihood ratings and defined by four levels in descending order: Extreme, High, Moderate and Low.

The risk tolerance of the Business may vary depending on the services, process, functions and activities involved, and hence the acceptance of the risks will depend on their context with the relevant corporate objectives/directives and regulatory or legislative requirements.

Either the potential consequence or the likelihood of the event may have a lower tolerance level e.g. OSH / drinking water quality (due to the need to protect public health) than say for an area such as Commercial Development, which has a higher risk tolerance because of the potential opportunity to the Business (reward).

The level of risk evaluated will direct the initial response to the risk in terms of whether the risk is deemed to be unacceptable or undesirable, particularly in the case of extreme and high level risks. In these cases, a risk mitigation plan is required in order to manage the risk to a more acceptable [lower] level.

However, upon review of the existing controls in place, in some cases the current residual risk level may be deemed to be appropriate in that all reasonable steps have been taken to mitigate the risk and any further action would be considered to be uneconomic or non-beneficial. In this case the decision to accept the risk as it stands and monitor its level over time, with periodic reviews undertaken to determine whether the risk level has been maintained or whether it has changed. Risk levels may change over time in response to future changes to operational and external environments, potentially escalating to a point where an action plan may be necessary.

Risk Treatment [Mitigation]

The treatment for a risk involves three stages:

- Identifying the possible treatment options
- Evaluating the most effective treatment option
- Planning and executing the mitigation [action] plan

Risk treatment is the way in which the Corporation risks are managed to bring them to an acceptable level, rather than eliminate them entirely, because it is generally considered to be uneconomic and unviable to permanently eliminate a risk from any business.

Treatment option evaluation finds its basis in the premise 'As low as reasonable practicable', otherwise known as the ALARP principle. The aim of the approach is to ensure that the cost to reduce the risk is not disproportionate to the benefit gained.

Four treatment options exist for treating a risk:

1. Avoid the risk
2. Reduce the likelihood of occurrence and/or the consequence of the risk
3. Transfer the risk e.g. contracting/outsourcing
4. Finance the risk i.e. insurance or contingent funds

Risk avoidance may be as simple as eliminating the activity associated with the risk. However, this approach may not be the most effective way of managing the risk, nor is it necessarily possible because the activity may be required as it is critical to the process or business objectives.

Reducing the risk is the most common approach accepted to manage high level risks and may result in a number of actions to reduce the likelihood of the impact and/or its level of consequence from occurring.

Risk transference to contractors or the like is not always possible and may not necessarily lead to a shift in the accountability for the risk and its associated consequences.

The last option to manage risk relates to financing the risk through insuring against its impact and/or likelihood. The risk is not addressed through mitigation, but the financial impact is managed in the event that the consequence of the risk is realised.

The decision to accept the risk and the mitigation options required (where applicable) must account for the following considerations:

- *Acceptability* of the treatment option by the relevant stakeholders
- *Compatibility* of the treatment option consistent with current practices
- *Cost effectiveness* of the treatment option, or can the same end result be achieved through an alternative method at a lower cost
- *Sustainability* of the treatment strategy with respect to ensuring the maintenance or enhancement of the socio-economic and environmental elements of the business and external environment
- *Regulatory* in respect of meeting regulatory/legislative requirements
- *Risk creation* in that does the treatment option introduce new risks

Monitor & Review

The process of ongoing review and monitoring is undertaken by the Corporation for both the risk profile and risk mitigation plans to ensure their relevance and accuracy. In terms of processes, operations and strategically, the [risk] profile should be reviewed annually at a minimum, while at the project level the [risk] profile should be reviewed at the transition between each project phase.

Other than the regular review cycle, where there is a change either internal/external to the Corporation that may alter the context of a profile, this will trigger the monitoring and review of the risk profiles.

Risk mitigation plans are tracked and their progress is monitored against the actions of the corresponding plan in relation to the level of risk [reduction] desired to be achieved.

Corporate Risk Framework

In order to understand how risk is managed by the Corporation, we were introduced to the 'Accountabilities Framework' during the Review. At the Corporate level, the Accountabilities Framework is an internal process designed to manage employees to ensure that The Corporation achieves its vision and purpose to its customers/stakeholders through its 'core processes' and 'enabling processes'.

The core areas of accountability include Customer Services, which both services and provides service delivery to customers; Asset Management, which manages, analyses the need and plans maintenance and operations for infrastructure assets, and also the acquisition (define assets, design, implementation and post-review) of new ones. The planning of infrastructure assets function is undertaken by the 'Plan Infrastructure Assets' core process, which involves strategic asset management and capital planning to plan future asset requirements, obtain funding approvals and manage water source compliance.

Enabling processes mainly cover internal business functions such as Finance, Facilities, Communication and Corporate Governance, but the management of drinking / non-drinking water quality, wastewater and drainage are also important and essential enabling processes for The Corporation.

Accountabilities within the Framework are assigned through line accountability at different levels from Regional Business Managers to Line Managers and then Employees, whereas Corporate Accountability is set by Process Owners and managed through Process Managers overseen by the Chief Operating Officer.

The Corporation identifies the services and processes within the different areas of accountability for which risks have been identified in accordance with the Corporate Risk Criteria. These risks link back to the accountabilities framework at the appropriate level of management/process as reported through the organisation from the various business areas up to the relevant committees and the Board. Lower level process level risks are fed up into the Corporate Risk profile, which is a living document that is subject to a formal review process at a minimum every two years.

Corporate Risk Assessment

Following the development of the Risk Framework, the Corporate Risk Profile (CRP) was developed to provide a high level summary of the corporate risks to the Business. Both opportunities and threats were identified that can be managed effectively to deal with uncertainty, thereby enhancing the capacity of the Business to achieve its objectives. The CRP represents the risks affecting the whole Business (including Operations), representing an 'enterprise-wide' approach and not just a measure of the impact on a local area.

As part of the development of the Corporate Risk Profile, the criteria for the assessment of risk were developed by the business. The Corporate Risk Assessment Criteria are as follows and include the derivation of the Consequence Rating for the Corporate level risks identified. Figure B.4 details the matrix used.

Rank	Financial	People	Environmental	Service Interruption	Reputation	Compliance	Descriptor
1	Less than $1M	First aid treated injury	Impact on local environment of very low social amenity and environmental value; Less than 0.01 ha affected, cosmetic remediation. Recovery duration – less than 1 week	No measurable operational impact	No media coverage, localised community impact on trust and credibility of the order of 1 month	Licence or regulatory limit exceedance, informal approach with no formal action or no Regulator involvement.	Insignificant
2	$1M - $10M	Medical treated injury **or** Localised illnesses requiring medical attention.	Impact on local environment of low social amenity and environmental value; Between than 0.01 ha to 0.1 affected, Easy remediation. Recovery duration – 1 week to several months	Minor service interruption localised disruption	Limited media coverage, localised community impact on trust and credibility of the order of 3 months **or** State wide impact on trust and credibility of the order of 1 month	Non-compliances or breaches of regulations, requires incident report to Regulator and/or serving of notice for rectification.	Minor
3	$10M - $100M	Long term or permanent disabling injury **or** Localised illnesses requiring hospitalisation	Impact on local environment of moderate social amenity and environmental value; Between than 0.1 ha to 1 ha effected Challenging remediation. Recovery duration – several months to several years	Substantial operational interruption, multiple business areas affected	Moderate media coverage, localised community impact on trust and credibility of the order of 3 – 12 months **or** State wide impact on trust and credibility of the order of 1 – 6 months	Non-compliance or breach of regulation or licence requirements with formal reprimand by Regulator and/or prosecution or fine.	Moderate
4	$100M - $500M	Single death **or** Multiple disabling injuries **or** Widespread illness requiring hospitalisation	Impact on local environment of high social amenity and environmental value; Between 1 ha and 10 ha affected, uncertain reversibility of remediation. Recovery duration – several years to several decades	Significant degradation of operations, multiple business areas affecting sustainable operations	Broad media coverage, localised community impact on trust and credibility in excess of 12 months **or** State Wide impact on trust and credibility of the order of 6 – 12 months	Non-compliance or breach of regulation - Restriction on business by Regulator and/or prosecution and fines.	Major
5	Greater than $500M	Multiple deaths	Impact on local environment of extremely high social amenity and environmental value; greater than 10 ha affected, impacts are irreversible and/or permanent.	Widespread or total degradation of operations, cross functional impact.	Extensive media coverage, state wide impact on trust and credibility in excess of 12 months	Non-compliance results in cancellation or loss of accreditation/licence.	Catastrophic

Figure B.4 – Corporate Risk Assessment Criteria (Consequence Rating)

The consequence rating criteria for Corporate Risk Assessment have been adapted from the Standard to suit the Business, covering six areas of risk all weighted equally including Financial (only at the Corporate & Strategic level), People, Environmental, Service Interruption, Reputation and Compliance. Each risk area is scored from 1 (lowest – insignificant) to 5 (highest – catastrophic – used at Corporate & Strategic level) according to the consequence assessment criteria applicable to each level.

Financial risk consequence or impact ranges from less than $1M (consequence rating score 1) to greater than $500M (consequence rating score 5). A moderate Financial risk ranges from $10M to $100M. Impacts resulting from financial risk being realised include direct and indirect costs (on revenue or savings) from fines, remediation, legal costs and operational or capital costs for mitigation measures.

The People risk consequence relates to minor injury/illness (consequence rating score 1) or death (consequence rating score 5) that may occur to the Corporation's employees, contractors/sub-contractors or third parties including the public.

Environmental risk consequence (or impact on the local environment of low/high social amenity and environmental value; and involving remediation where possible) ranges from insignificant (consequence rating score 1) – recovery duration < 1 week to major – recovery duration several years to decades (consequence rating score 4) and catastrophic – no recovery; irreversible or permanent impacts (consequence rating score 5). Impact on the environment may be measured by the impact on the physical environment or ecosystem including flora and fauna, atmosphere or social amenity.

Service Interruption is used as a consequence measure scored from 1 to 5 from lowest (no measurable operational impact) to highest risk (widespread or total degradation of operations cross-functional impact) relating to operational [service] impacts to customers. Interruptions to service are gauged by outage time, the impact on the ability to functionally operate including the geographical extent of the problem.

The reputation of the Business is rated by consequence with respect to [negative] the duration and extent [local/state wide] of media coverage and the impact on credibility [trust] with the local community ranging from 1 month (consequence rating score 1 - insignificant) to > 12 months (consequence rating score 5 - catastrophic). Reputational impacts relate to balance of customer expectations and the perception of the brand image of the business over time as derived from the media and through political and community scrutiny.

Compliance risks are associated with licence or regulatory standards. The consequence measures for compliance risk relate to exceeding regulatory limits and their response (mitigation), with the lowest (insignificant - score 1) and highest (catastrophic - score 5) risks requiring no formal action (regulator not required) and non-compliance resulting in loss of operating licence.

Similarly, the likelihood rating for the Corporate Risk Profile was developed for the Risk Assessment Criteria based on the AS/NZ Standard for Risk Management and may be represented as follows (Figure B.5):

Rank	Description	Frequency	Descriptor
A	The event is expected to occur in most circumstances	Greater than once a year	Almost Certain
B	The event will probably occur in most circumstances	At least once per year	Likely
C	The event should occur at some time	At least once every 5 years	Possible
D	The event could occur at some time	At least once in 10 years	Unlikely
E	The event may occur in exceptional circumstances	Once every 30 years or greater	Rare

Figure B.5 - Corporate Risk Assessment Criteria (Likelihood Rating)

The rating for likelihood ranges in descending order from highest rank A (almost certain) to the lowest rank E (rare) event, providing an indicative frequency of occurrence to guide the assessment of risk attributable to likelihood. The frequency of the event occurring ranges from [almost certain] greater than once per year (Rank A) to [rare] once every 30 years or greater (Rank E) over the five rankings, which is a standard and typical best practice approach to this type of assessment. An event that is likely is said to occur at least once per annum.

In order for the Corporation to have an understanding of the effectiveness of control measures put in place to mitigate the impact of current residual risks, a control effectiveness rating is applied to each risk. There are only three rankings for this rating, including Optimal, Adequate and Inadequate as outlined in Figure B.6, where optimal and adequate effective controls respectively exceed and meet compliance requirements while inadequate ones do not.

Rank	Description	Compliance	Descriptor
O	Control activities functioning as designed and provide assurance. (Confidence in control reliability >95%)	Exceeds compliance requirements	Optimal
A	Control activities functioning to required level and provide reasonable assurance. (Confidence in controls reliability >75%)	Meets compliance requirements	Adequate
I	Control activities do not exist or are not functioning as intended and do not provide reasonable assurance. (Confidence in controls reliability <75%)	Does not meet compliance requirements	Inadequate

Figure B.6 - Corporate Risk Assessment Criteria (Control Effectiveness Rating)

The decision to accept a risk at its current residual risk level is made ion the basis of the Risk Acceptance Decision criteria for Risk Assessment as outlined below in Figure B.7.

Rank	Acceptance evaluation	Descriptor	Descriptor
Extreme	Unacceptable	Risk is unacceptable, risk mitigation plan required, detailed research and management planning required at senior levels.	Extreme
High	Undesirable	Decision on risk acceptance to be made by Process Owner and Process Manager, risk mitigation plan required.	High
Moderate	Monitor	Decision on acceptance of risk to be made by Process Manager, Management responsibility must be specified.	Moderate
Low	Acceptable	Risk is acceptable, ongoing monitoring and management by routine process.	Low

Figure B.7 - Corporate Risk Assessment Criteria (Risk Acceptance Decision)

The risks are first evaluated in terms of their overall level (Low to Extreme) by way of the Corporate Risk Matrix (Figure B.8) to determine how they are treated and the level of planning required.

Risk matrix

CONSEQUENCES	Level of Risk				
5 Catastrophic	H	H	E	E	E
4 Major	M	H	H	E	E
3 Moderate	L	M	H	H	H
2 Minor	L	L	M	H	H
1 Insignificant	L	L	L	M	M
	E Rare	D Unlikely	C Possible	B Likely	A Almost Certain
	LIKELIHOOD				

LEGEND

E	**Extreme risk** – Risk mitigation plan required, risk is unacceptable, detailed research and management planning required at senior levels.
H	**High risk** – Risk mitigation plan required, senior management attention needed, decision on acceptance of risk to be made by Process Owner and Process Manager.
M	**Moderate risk** – Management responsibility must be specified, decision on acceptance of risk to be made by Process Manager
L	**Low risk** – Risk is acceptable, monitored and managed by routine process

Figure B.8 - Corporate Risk Assessment Criteria (Risk Matrix and Level of Risk)

Risks ranked as 'high' in terms of their risk acceptance ranking are considered to be undesirable and require a risk mitigation plan, whereas an 'extreme' risk acceptance decision would require research and senior level management planning in addition to the mitigation measures. In contrast, a risk acceptance decision of 'moderate' requires monitoring and management responsibility assigned.

Strategic Risk Framework

The Strategic Risk Profile has been developed by the Corporation to assess the external risk at the whole-of-business or organisational level; at a scale that considers the whole population of Western Australia, the political environment within which the Business operates and the environment generally. Strategic Risk Assessments include an assessment of impacts from global security/terrorism,

pandemic events, Government pricing regulation, natural disasters, climate change impact on source yields and green house gas abatement requirements. The Strategic Risk Profile for The Corporation is represented in Figure B.9 below:

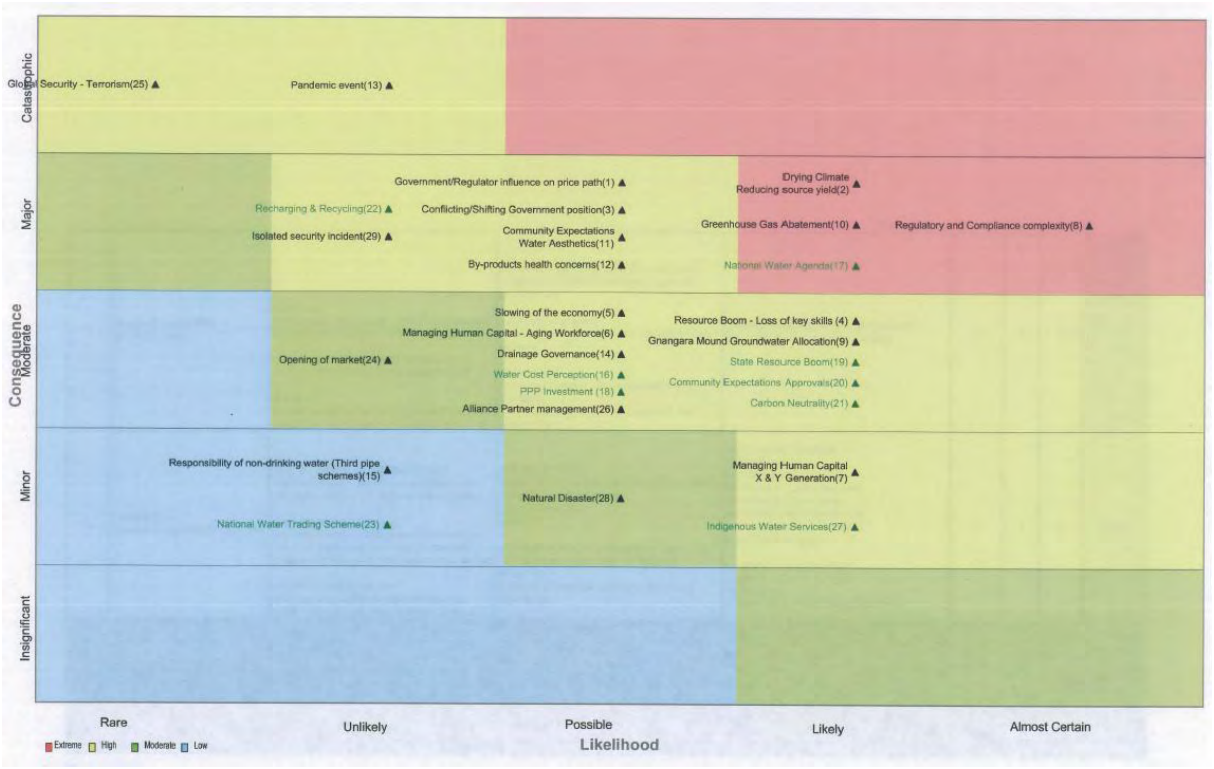


Figure B.9 - Water Corporation Strategic Risk Profile

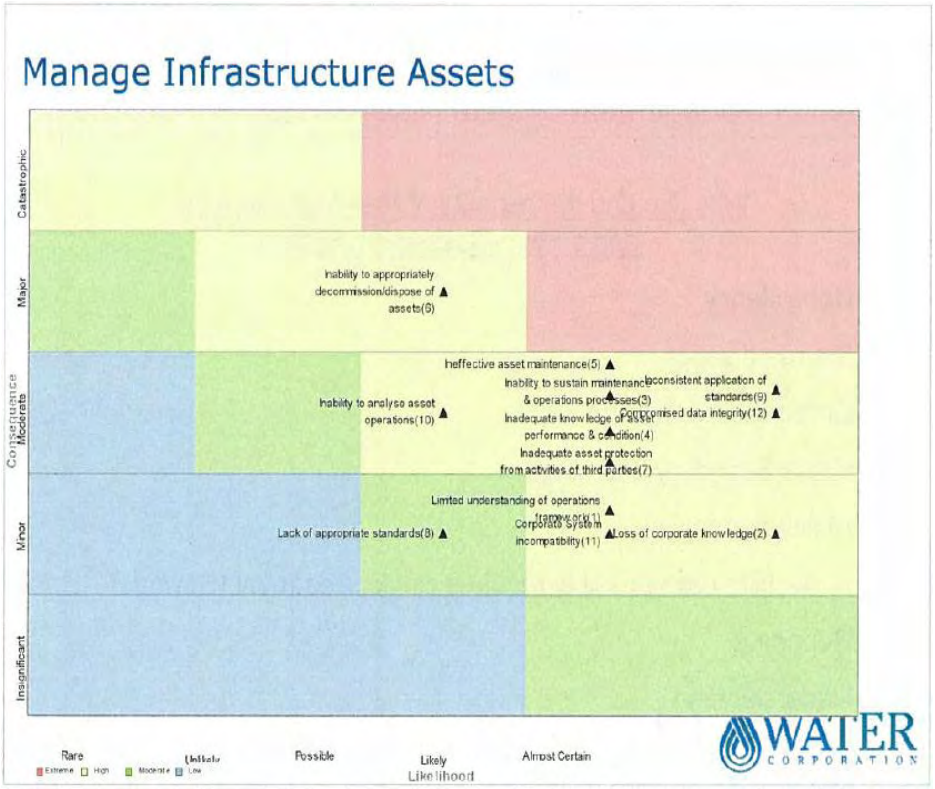
For all strategic level risks identified, the title, description, impact on the business, existing controls and the respective control effectiveness, consequence and likelihood ratings have been assigned to provide the overall risk level (low, moderate, high, and extreme) or 'current residual risk' (with current controls).

Where the current residual risk level for strategic risks is extreme (pink) or high (yellow) these represent the greatest risks to the business either because of their high consequence (impact) and/or high likelihood (frequency) of occurrence. One of the major and almost certain extreme risks for the Corporation is the future complexity of regulation and compliance. While the intention of regulators is to ensure levels of service are maintained at an efficient cost, the impact on the Corporation includes financial, reputational, service interruption and compliance risks particularly related to project delays resulting from longer planning/approvals/stakeholder consultation timeframes.

Process Level Risks

Below the Corporate level risks sit the process level risks. It is at this level, for example say for the "Manage Infrastructure Assets" area that has risks for which employees below the Management team can practically assist with managing. The Process Risk Profile for the Manage Infrastructure assets process may be found below as follows in Figure B.10:

Figure B.10 - Process Risk Profile - Manage Infrastructure Assets process level



Appendix C Proposed LoS Expenditure

C.1 *Proposed LoS Expenditure by Water Corporation from 2008-09 to 2013-14*

The following Appendix provides a detailed breakdown of the proposed LoS expenditure by Water Corporation for the period from 2008-09 to 2013-14. It summarises information provided directly by the Water Corporation.

Table C.1: Summary of Water Corporation's proposed LoS for the period of 2008-09 to 2013-14 ($'000, nominal)

Expenditure Adjustments	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Desalination LoS	1,704	2,999	6,034	53,759	50,284	46,539	**161,320**
Corporate Initiatives	7,372	15,271	22,312	29,252	34,536	38,236	**146,980**
Capital Projects	8,109	18,632	21,941	25,517	28,282	29,157	**131,638**
Externally imposed	19,861	18,069	15,473	15,520	15,785	17,992	**102,700**
Other items	(2,799)	2,852	5,808	4,165	3,436	3,436	**16,897**
Reimbursable projects	1,688	7,501	8,047	9,784	12,850	15,998	**55,867**
Total proposed LoS	**35,935**	**65,324**	**79,615**	**137,997**	**145,173**	**151,358**	**615,402**

Source: Water Corporation

Table C.1 above clearly outlines the significant increase in LoS expenditure proposed by Water Corporation over the period from 2008-09 to 2013-14. Expenditure is expected to increase significantly year-on-year throughout the period, from $35.9 million in 2008-09 to over $150 million in 2013-14. This represents a nominal increase of 321 per cent over the period. Total LoS expenditure for the period is predicted to exceed $615 million.

A primary source of this increases in expenditure is related to the two seawater desalination plants, which together represent over a quarter of the total LoS expenditure. The other significant increases in the proposed LoS expenditure are corporate initiatives, expenditure associated with capital projects, and externally imposed services.

While we lack sufficient information at this stage to make informed comments on the appropriateness and magnitude of the expenditure proposed, we note that there are a number of significant expenditure items (outlined in the following Appendix) that we believe require further investigation, particularly in relation to the make-up of the larger expenditure items, further information on the justification for the expenditure, and how it relates to the timing and completion of capital projects (if related to the Corporation's capital program). As such, we recommend that the Authority conduct a detailed review (either as a distinct and independent review, or as part of a broader in-depth review of the Corporation's operating and capital expenditure) of the Corporation's proposed LoS expenditure.

The following tables provide a detailed, itemised, breakdown of the LoS expenditure proposed by Water Corporation, in addition to our findings and recommendations.

Table C.2: Water Corporation's LoS Corporate Initiatives ($'000, nominal)

Corporate Initiatives	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Water Corporation Justification
DWQ Infectious Pathogen	50	(90)	(90)	(90)	(90)	(90)	Improved drinking water quality
Harvey Water - Temporary Entitlement	(280)	(490)	(490)	(490)	(490)	(490)	Climate change response - improved security of supply
ACA – Gap Treatment Management Program (change to base)	1,216	1,216	1,216	1,216	1,216	1,216	Improved asset management - required as part of an efficient capital maintenance program.
Water mains cleaning	1,220	2,440	3,660	4,880	4,880	4,880	Improved drinking water quality
Sustainability Strategy	660	1,350	1,970	2,600	2,600	2,600	Sustainability strategy - examining various ways to reduce the Water Corporations environmental footprint
New Accounting Treatment - Shift in Capital Funds to Operating Funds	(51)	100	9	(299)	(676)	(676)	Improved drinking water quality
Mid West Region - Flushing Valve Maintenance Program	650	-	-	-	-	-	Improved drinking water quality
Maintaining Critical Waste Water Pump Stations & Pressure Mains (50% - LOS see 9)	100	150	-	-	-	-	Part LOS for prevention of wastewater overflows / system failures
Managing the Risk of Flooding due to failure of drainage assets	430	-	-	-	-	-	Improved performance of drainage assets
Sewer Reticulation blockage & Overflow reduction Strategy - Perth Region	100	-	-	-	-	-	Prevention of wastewater overflows / system failures
Backflow Prevention	1,600	6,100	6,100	6,100	6,100	6,100	Improved drinking water quality
Sewer Gas Monitoring	60	60	60	-	-	-	Odour control

Corporate Initiatives	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Water Corporation Justification
WW Recycling/Tree Farm	20	-	-	-	-	-	Environmental benefits from alternative wastewater discharge
Mains Cleaning	500	-	-	-	-	-	Improved drinking water quality
Greenhouse Gas Abatement	253	195	110	115	120	120	Sustainability program - reduced GHG emmissions
Pumping Efficiencies Program	420	170	150	50	-	-	Part of the GHG abatement project - reduced GHG emmissions
Leadership in Sustainability - Implementation Program (part LOS - see 163)	424	452	301	304	280	280	Sustainability strategy - examining various ways to reduce the Water Corporations environmental footprint
Environmental Water Provision Studies with DoW	-	100	100	100	100	100	Department of Water requirement for Corporation to undertake some initial Ecological Water Requirement studies that will influence the allocation planning to determine sustainable Environmental Water Provisions for existing dams
Backflow Prevention - Retrofit	-	2,000	7,500	13,000	18,500	24,000	Retrospective fitting of backflow prevention devices on high risk properties - mandatory requirement for all new and redeveloped commercial and industrial services to have containment backflow prevention
Backflow Prevention - on going support	-	400	600	1,200	1,800	-	Improved levels of protection to Corporation assets and interests at a time when risk levels are known to be increasing (increasing levels of non-potable schemes, effluent and greywater reuse, groundwater bores and high levels of chemical use by industry)
Optimising the Urban Water Cycle with Non	-	150	300	-	-	-	Provision of tools for the Corporation to actively influence and respond to a changing water management

Corporate Initiatives	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Water Corporation Justification
Drinking Water							environment with increased focus on non drinking water, linking non drinking water to Source Development Plan, establish sustainable and defendable position, equipment stakeholder to make informed decisions whether to pursue non drinking water solutions and identify business needs to support non drinking water
Demand Management for Climate Change Affected Regions - GSR, SWR & MWR	-	402	-	-	-	-	These regions have extreme and high risk of water shortages with no relief over the next 3 years. This project will reduce the severity of water shortages until the long term planning solutions are implemented and scheme upgrades completed.
Sealing of Bore Headworks	-	200	300	-	-	-	Australian Drinking Water Guidelines require bores to be sealed to prevent ingress of surface water or shallow groundwater. Insufficient sealing of bore headworks may lead to contamination of groundwater leading to possbile public health incident, loss of confidence in the water supply etc.
Crane Inspections	-	196	196	196	196	196	Compliance with OSH Regulations 1996
Pumping Efficiencies Program	-	170	320	370	-	-	As water and wastewater pumping represents over 75% of Corporation's electricity costs, project is seeking to deliver efficiencies in pumping operations, leading to reduction in electricity costs and greenhouse gas emissions
Total	**7,372**	**15,271**	**22,312**	**29,252**	**34,536**	**38,236**	

Source: Water Corporation

Table C.2 above provides a detailed breakdown of the LoS expenditure proposed by Water Corporation for corporate initiatives over the period from 2008-09 to 2013-14.

As can be seen from Table C.2 above, the primary expenditure item is Backflow Prevention – Retrofit. The justification provided by the Corporation for this item notes the mandatory requirement for all new and redeveloped commercial and industrial services to have containment backflow prevention. However, this does not fully explain the significant increase in expenditure over time from $2 million in 2009-10 to $24 million in 2013-14. In order to comment on this figure, we would need to review the number, location and unit cost rates of the proposed retrofits. We would also like to see details of whether the Water Corporation is investigating co-contributions to the scheme from individual properties. We note that there are two other backflow related expenditure items which also experience large increases from 2008-09 to 2009-10 and ongoing. Further information on these items would be required to fully assess the reasons for the increases.

Two other significant expenditure items of note are the Water Mains Cleaning and Sustainability Strategy. Water Mains Cleaning is aimed at improving the drinking water quality, and is expected to increase from $1.2 million in 2008-09 to $4.9 million in 2013-14. The Sustainability Strategy expenditure is aimed at examining ways of reducing the Water Corporation's footprint with expenditure increasing from $0.7 million in 2008-09 to $2.6 million in 2013-14. To fully assess this expenditure increase we would need to examine details of what is included in the expenditure, that is, development of a strategy, monitoring requirements, staff time, funding for specific projects, etc.

The cause for the dramatic increases in expenditure of these particular expenditure items remains unclear. The increase may in part be due to 'catch-up' or improved standards. While we cannot comment on the appropriateness of the proposed increases, we recommend the Authority note these particular expenditure items for potential further investigation.

Table C.3: Water Corporation's proposed capital project related LoS expenditure ($'000, nominal)

Capital Projects	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
AFIS Canning Wungong Sth Dand CDP Upgrades	337	357	378	399	399	399	Improved drinking water quality - ADWG
Bridgetown Regional Water Source	2	3,738	3,738	3,738	3,738	3,738	Climate change response - restoring the security of supply
Overflow risk management	354	725	1,048	1,232	1,232	1,232	Prevention of wastewater overflows / system failures
Overflow Risk Management Project (WORM)	294	579	775	895	895	895	Prevention of wastewater overflows / system failures
AFIS Woodman Pt WWTP Odour Control 1	-	668	1,403	1,403	1,403	1,403	Improvements in WWTP odour
NFIS Mundaring WTP	-	-	-	1,868	1,868	1,868	Improved drinking water quality
Infill Sewerage Pump Stations	78	213	303	393	393	393	Environmental benefits from infill sewerage program
NFIS Drought Contingency Bores	356	356	356	356	356	356	Climate change response - managing the security of supply
WWTB South - Notional FIS Summary	95	485	499	579	579	579	Various environmental and drinking water quality initiatives
Esperance Treated WW	134	134	134	134	134	134	Improved wastewater treatment and disposal (environmental benefits)
Harvey water trade	188	242	297	426	426	426	Climate change response - managing the security of supply
NFIS Woodman Pt Odour Ctl Stg 1 &2	1,879	2,544	2,606	2,606	2,606	2,606	Odour control facilities to confine odour impacts to within the plant's existing odour buffer zone.
NFIS Harvey Water Trade: Serv Infra	-	-	-	-	1,245	1,245	Enhanced level of service provided to customers

Capital Projects	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
AFIS GSTWS SCADA System	243	401	639	877	1,115	1,115	SCADA to control and monitor GSTWS in accordance with ADWG. CONSEQUENCES: Failure to meet the 1996
NFIS Wungong 1400 TM (Cleaning)	1,000	1,000	1,000	1,000	1,000	1,000	Drinking water quality - ADWG
AFIS Alkimos WWTP Stage 1 & Effluent Disp.	-	774	804	848	990	990	Project to ensure odour requirements and safe disposal to the environment
AFIS Woodman Pt Sludge Treat Upgrade	-	621	665	665	665	665	Improved wastewater treatment and disposal (environmental benefits)
NFIS - Esperance TWS SCADA Upgrade	426	426	426	426	426	426	SCADA to control and monitor Esperance in accordance with ADWG. CONSEQUENCES: Failure to meet the 1996 Drinking water quality - ADWG
NFIS Denmark: Install UF Plant	390	390	390	390	390	390	Drinking water quality - ADWG
NFIS SWR SCADA Integration Stage 2	-	125	250	375	375	375	SCADA to control and monitor SWR in accordance with ADWG. CONSEQUENCES: Failure to meet the 1996
AFIS Coral Bay Water (FIS Funding Correction)	316	316	316	316	316	316	Drinking water quality - ADWG
AFIS Wyndham Water Supply Upgrade	270	270	270	270	270	270	Drinking water quality - ADWG
AFIS Capel WWTP Upgrade	253	253	253	253	253	253	Improved wastewater treatment and disposal (environmental benefits)
NFIS Margaret River TWS Contingency	225	225	225	225	225	225	Improved security of water supply at Margaret River
GSTWS SCADA Systems (SOC impact)	43	71	113	155	197	197	SCADA to control and monitor GSTWS in accordance with ADWG.

Capital Projects	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
							CONSEQUENCES: Failure to meet the 1996
NFIS Jandakot GWTP	164	164	164	164	164	164	Drinking water quality - ADWG
GIS Projects	-	-	36	99	159	159	Enhanced level of service provided to customers through GIS
AFIS Hamilton Hill Inlet Chlorination	142	142	142	142	142	142	Drinking water quality - ADWG
NFIS Denmark: Install UF Plant	-	-	-	87	130	130	Drinking water quality - ADWG
NFIS - Esperance Treated WW Mgmt - Stage 1	-	-	126	126	126	126	Improved wastewater treatment and disposal (environmental benefits)
Woodman Pt TRF Rectification	126	126	126	126	126	126	Odour control facilities to confine odour impacts to within the plant's existing odour buffer zone.
GARTWS SCADA System	1	17	54	91	123	123	SCADA to control and monitor GARTWS in accordance with ADWG. CONSEQUENCES: Failure to meet the 1996
AFIS Donnybrook WWTP Upgrade 620kL/d	121	121	121	121	121	121	Improved wastewater treatment and disposal (environmental benefits). Proportion of expenditure relating to meeting growth has been excluded.
NFIS Hopetoun WS: Interim Source Upgrade	-	-	-	114	114	114	Improved security of water supply and quality
AFIS Bunbury WWTP Amp to 15ML	-	335	335	335	335	335	Ministerial requirement for total nitrogen discharged to the sea be limited to 60 tonnes per annum
AFIS Woodman Pt Sludge Treat Upg.	-	291	291	291	291	291	Odour control facilities to confine odour impacts to within the plant's existing

Capital Projects	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
							odour buffer zone.
NFIS - NWR SCADA Stage 2	-	255	507	507	507	608	Replace exisitng control and monitoring system with SCADA, leading to efficiencies and reduced risk of system failure
NFIS Beenyup 135 ML/D (Prim Treat)	-	222	663	663	663	663	Beenyup Treatment Plant upgrade due to growth in northern corridor and improve odour control
Customer First Replacement	-	153	153	153	153	153	Improved information to support customer contact management and customer self serve leading to improved and focussed customer service
NFIS - Esperance Treated WW Mgmt - Stage 1	-	126	126	126	126	126	New plant required to adhere to DOE license requirements in relation to effluent disposal and flooding.
AFIS GSTWS SCADA System	-	79	85	100	100	100	SCADA to control and monitor GSTWS in accordance with ADWG. CONSEQUENCES: Failure to meet the 1996
NFIS Greenmount Darlington Zone Chlorination	-	54	109	167	225	225	Drinking water quality - ADWG
Other FIS items less than $100k	672	1,636	2,016	2,278	3,182	3,956	
Total capital projects	**8,109**	**18,632**	**21,941**	**25,517**	**28,282**	**29,157**	

Source: Water Corporation

Total proposed LoS expenditure associated with capital projects is expected to exceed $130 million for the period 2008-09 to 2013-14, spread across a large range of capital projects. The most significant expenditure item is the Bridgetown Regional Water Source, with $0.2 million in 2008-09, increasing to $3.7 million per year from 2009-10 to 2013-14. The justification provided by the Corporation is that the expenditure is a response to climate change and is aimed at restoring the security of water supply.

The next most significant expenditure item is the Woodman Point Odour Control Stages 1 and 2. This item, totalling almost $15 million over the 2008-09 to 2013-14 period, is aimed at implementing odour control facilities to confine odour impacts to within the Woodman Point plant's existing buffer zone.

We do not have sufficient information to assess the appropriateness of the proposed LoS expenditure outlined in Table C.3, and as such we recommend the Authority undertake a detailed review of the Corporation's capital program, including associated operating expenditure.

Such a review should (as it relates to LoS expenditure) involve a detailed analysis of whether the expenditure is new or adjusted on-going expenditure, the correlation between new expenditure and new regulatory requirements, the correlation between the commencement of project related operating expenditure and project completion dates, a detailed breakdown of the proposed operating expenditure for the larger projects (defined as capital projects with recurrent operating expenditure greater than $1 million per annum) and a review of the justification for the proposed projects.

Table C.4: Water Corporation's proposed externally imposed LoS expenditure ($'000, nominal)

Externally Imposed LoS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Compliance(Ocean outlet monitoring, Welder Observation)	107	217	333	455	455	455	Tighter EPA monitoring requirements for ocean outlets & changed OSH requirements for supervision of welding activities
SWR Bio Solids Management	-	-	-	(40)	(40)	(40)	Improvement environmental benefits from disposal of wastewater biosolids
Energy Efficiency Opportunities	520	-	-	-	-	-	Sustainability program - reduced GHG emissions
Provision for FESA and LGRE Rates and Charges	3,973	-	-	-	-	-	One-off adjustment imposed on Corporation by FESA and Local Authorities
Contaminated Sites Act Compliance - Investigation and Remediaton	500	500	250	250	250	250	Improvement environmental benefits from reduced site contamination - EPA requirement
Demand Management for Climate Change Affected Regions (wem Over Dow Reimb)	442	335	-	-	-	-	Part of DoW requirements to demonstrate water efficiency initiates - climate change response
Fatigue Management	1,465	1,400	1,400	1,400	1,400	1,400	OSH requirement - management of employee fatigue
Ergonomics Depot Redesign	80	-	-	-	-	-	OSH requirement - improved employee working conditions
Physical Locking of Water and Waste Water Valves	70	-	-	-	-	-	OSH requirement
Investigation of Drainage Assets for Contamination	100	-	-	-	-	-	Improvement environmental benefits from reduced site contamination - EPA requirement
Compliance with Trade Practices Act	60	-	-	-	-	-	Compliance with TPA requirements

Externally Imposed LoS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Water Law Reform Project	180	-	-	-	-	-	Extensive revisions to the Water Legislation
Capability for risk, regulatory and business continuity processes	150	50	-	-	-	-	Risk and compliance management
DoW Water allocation Licences	330	-	-	-	-	-	Increased DoW licence charges
Collie River Diversion Project	10,000	5,000	-	-	-	-	Improved salinity management with DWQ and Environmental benefits
WEM Management Costs	847	-	-	-	-	-	Part of DoW requirements to demonstrate water efficiency initiates - climate change response
NFIS - Prevention of Falls	804	704	704	704	704	704	OSH requirement
AFIS Corporate Site Security	233	233	233	233	233	233	Upgrades to site security facilities as part of operating license requirements
Pressure Vessel Inspections	-	107	107	107	107	107	Compliance with OSH Regulations 1996
Environmental Monitoring	-	425	470	470	470	470	Compliance costs associated with Environmental Operating License for Perth Desalination Plant as issued by the Department of Environment and Conservation requiring the Corporation to undertake real time monitoring of dissolved oxygen at locations in Cockburn Sound
Fatigue Management - Country	-	2,000	2,000	2,000	2,000	2,000	Safe system of work in relation to working hours in the country regions, thus reducing risk of fatigue to employees and contractors
Fatigue Management Metro (rebid from 2008-	-	1,400	1,400	1,400	1,400	1,400	Develop and implement a system of work where the risk to O&M Alliance partners and Corporation employees a a

Externally Imposed LoS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
09)							result of fatigue is reduced to "medium" as described in Worksafe's Code of Practice
Fatigue Management - WTD	-	1,150	1,150	1,150	1,150	1,150	Financial impact of implementing "Draft Working Hours Standard" on Water Technologies Division (including Relliance Alliance)
Compliance with Trade Practices Act.	-	48	96	141	186	231	Develop TPA Manual, establish TPA compliance training program and undertake TPA compliance reviews to ensure adherence to TPA
Dangerous Goods Management	-	1,850	980	980	980	980	Compliance with Dangerous Goods Safety Regulations (mainly chlorine) as non-compliance may result in license suspension, prosecution or directions to cease operations and undertake remedial action.
Water Law Reform Project	-	180	180	180	180	180	Updated statewide legislation to support business processes and outcomes for water services and water resources
Increased cost of Operating licence / NWI audit	-	70	70	(80)	70	2,162	Due to recent changes, additional funds are required to meet comprehensive triennial audits as legislated under the National Water Initiative and Operating License. Next Operating License audit will be conducted in 2009/10 and National Water Initiative audit in 2010/11
National Water Initiative - Water Reporting	-	600	900	970	1,040	1,110	Establish robust data collation and reporting framework to enable compliance with the Water Information Reporting requirements under the Commonwealth Water Act 2007 and Water Regulations 2008

Externally Imposed LoS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Environmental License Fees for WWTP's	-	200	200	200	200	200	Increase in charges for the Wastewater Treatment Plant operating licenses levied by Department of Environment and Conservation.
Collie River Diversion Project	-	1,600	5,000	5,000	5,000	5,000	Contribution towards improving water quality in Wellington Dam such that the Collie Irrigation District benefits from reduced salinity under terms of Harvey Water Trade Agreement
Total externally imposed LoS	**19,861**	**18,069**	**15,473**	**15,520**	**15,785**	**17,992**	

Source: Water Corporation

Total externally imposed LoS expenditure is expected to exceed $100 million for the period 2008-09 to 2013-14, and is also spread across a large range of capital projects. The dominant externally imposed LoS expenditure item is the Collie River Diversion Project, with two individual components totalling $36.6 million combined over the period from 2008-09 to 2013-14. The project is designed to improve water quality in Wellington Dam and benefit the Collie Irrigation District through reduced salinity.

The other expenditure items of particular interest are the various 'fatigue management' items, totalling in excess of $31 million for the period. The Corporation claims that these measures are an occupation health and safety requirement, designed to reduce the risk of fatigue among employees and contractors.

We have insufficient information in relation to the Collie River and 'fatigue management' items to fully comment on the appropriateness and magnitude of the proposed expenditure, given the size of the expenditure (over 65% of total proposed externally imposed LoS expenditure), we recommend, at the very least, the Authority further investigate these items in detail. This would involve a detailed breakdown analysis of the proposed expenditure and a review of the justification for the expenditure.

Table C.5: Water Corporation's proposed other LoS expenditure ($'000, nominal)

Other LoS Items	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Asset Management Data - Improving Collection & Reporting	200	1,000	1,500	800	-	-	Improved assessment management - required as part of an efficient capital maintenance program and reduction to service disruptions
ACA GAP Treatment Management Program (additional funding)	2,500	5,000	10,000	10,000	10,000	10,000	Improved assessment management - required as part of an efficient capital maintenance program and reduction to service disruptions
Water Mains Asset Condition Inspections	1,050	1,100	-	-	-	-	Improved assessment management - required as part of an efficient capital maintenance program and reduction to service disruptions
"New Assets" Asset Management Handover Group	1,250	1,000	1,000	1,000	1,000	1,000	Improved assessment management - required as part of an efficient capital maintenance program and reduction to service disruptions
Alliance Contract Renewal	-	1,500	1,000	-	-	-	Once-off cost for Alliance contract renewal
Alliance Contract Re-Tender WTD	-	1,000	-	-	-	-	Once-off cost for Alliance contract renewal
Disposal of Surplus Assets	2,144	2,144	2,144	2,144	2,144	2,144	Asset disposals expenditure
Logue Brook Dam - Payment to Department of Sport & Rec	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	Adjustment in future years for one-off payment to Dept of Sport & Rec in 2007/08
Workers' Compensation Provisions	57	108	164	221	292	292	Adjustment to worker's comp
Total other LoS item expenditure	**(2,799)**	**2,852**	**5,808**	**4,165**	**3,436**	**3,436**	

Source: Water Corporation

As can be seen from Table C.5, total other LoS expenditure is expected to remain relatively low during the period. However, this is due to the $10 million annual adjustment for a one-off payment to the Department of Sport and Recreation in 2007-08. There are a couple of significant expenditure items that warrant further investigation.

The GAP treatment management program increases from $2.5 million in 2008-09 to $10 million per annum in 2010-11. This item, which the Corporation claims is aimed at improving assessment management and required as part of an efficient capital maintenance program, totals $47.5 million over the period. This is a significant amount of expenditure, and we do not have sufficient information at this point to comment on the appropriateness and magnitude of the expenditure. As such we recommend that the Authority seek to investigate this item in detail.

The 'disposal of surplus assets' is another significant item that we recommend the Authority seek to investigate further. This item is $2.1 million per annum and totals more than $12.5 million for the period. The Corporation claims this expenditure represents the cost of asset disposal however further details on what this entails is required.

Table C.6: Reimbursable projects

Costs offset by additional revenue	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Tree Farm	180	-	-	-	-	-	Revenue offset
NFIS KWRP Stage 2	-	1,015	1,015	1,015	1,015	1,015	Commercial agreement at Kwinana Water Reclamation Plant
NFIS Port Hedland: Yule Stage 2 & Finucane PS	282	282	282	282	282	282	Commercial agreement in the North West Region
NFIS KWRP Enhancement (1.3ML/D)	225	225	225	225	225	225	Commercial agreement at Kwinana Water Reclamation Plant
Expected levels of activity on Cocos Island & Christmas Island	480	4,957	1,728	(208)	(912)	(1,633)	Extension of current arrangement with DOTARS to manage water, power and wastewater infrastructure to include both management component and management of capital works program on Cocos and Christmas islands.
Other revenue - Non Bylaw other than Cocos Christmas	-	200	200	200	200	200	Revenue offset
Special Agreement demand changes.	-	160	160	160	160	160	Additional operating costs associated with earning additional Special Agreement revenue in the North West Region
Adjustment for non Bylaw rev 66%	-	132	330	330	330	330	Ongoing reimbursement activities in the regions, offset by additional Non Bylaw revenue
Land Development Growth	521	320	320	320	320	320	Meet continuing high levels of land development and building activities, customer technical servicing and administrative activities whilst maintaining statutory response times
Reimbursement works mainly driven by	-	-	3,577	7,250	11,019	14,889	Additional reimbursement works related to infrastructure maintenance activities

Costs offset by additional revenue	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Justification
Infrastructure Mtce offset by increased Revenue							
Increased in the leased out properties to the external parties	-	210	210	210	210	210	Additional costs incurred to fulfil Corporation's responsibilities as landlord with total tenancies increasing to 400 (from 300 only 3 years ago)
Total costs offset by additional revenue	**1,688**	**7,501**	**8,047**	**9,784**	**12,850**	**15,998**	

Source: Water Corporation

Table C.6 above outlines the increase in costs offset by additional revenue from $1.7 million in 2008-09 to almost $16 million in 2013-14. This increase in being driven almost exclusively by reimbursement works related to infrastructure maintenance activities. These reimbursement works begin in 2010-11 at $3.6 million and increase significantly to almost $15 million in 2013-14. It is unclear what the cause for the sudden increase in expenditure is, or what the expenditure consists of. We recommend that the Authority undertake a further investigation of this particular expenditure item, involving a detailed analysis of what makes up the expenditure and what is the fundamental driver of the expenditure.

We also note that the expenditure item 'expected levels of activity on Cocos Island and Christmas Island varies significantly over the period. The explanation provided by the Corporation notes an expansion of the current arrangement with DOTARS to include additional responsibilities. However, this does not explain the variances and movements in expenditure. We recommend that the Authority also investigate this particular item to gain a greater understanding of the underlying cause for the proposed variations in expenditure.

Halcrow Pacific Pty Ltd

Melbourne – Head Office
Level 1, 542 Station Street, Box Hill VIC 3128
Tel +61 3 9899 9777 Fax +61 3 9899 1214

Melbourne – City
Level 34, 360 Collins Street, Melbourne VIC 3000
Tel +61 3 8682 3900 Fax +61 3 8682 3999

Sydney – City
Level 22, 68 Pitt Street, Sydney NSW 2000
Tel +61 2 9250 9900 Fax +61 2 9241 2228

Sydney – Chatswood
Level 20, 809 Pacific Highway, Chatswood NSW 2067
Tel +61 2 9410 4100 Fax +61 2 9410 4199

Brisbane – City
Level 5, 20 Wharf Street, Brisbane QLD 4000
Tel +61 7 3169 2900 Fax +61 7 3169 2999

www.halcrow.com